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ABSTRACT

The experimental group contained 39 entering freshman nursing students who volunteered for "human relations training." The volunteer control group of 23 received human relations training through the lecture-discussion method, and the control group consisted of 41 non-volunteers who received no additional training in human relations. Four null hypotheses were tested: (1) The hypothesis that senstivity training has no effect on the quality of nursing care was rejected by three of four comparisons which showed statistically significant results, (2) The hypothesis that the interpersonal relations of students with patients, teachers, and peers are not affected by sensitivity training was rejected on seven comparisons which showed statistically significant results, (3) The hypothesis that grades attained by students in nursing courses are not influenced by sensitivity training was accepted, (4) The hypothesis that the attrition rate of students in the first year of their associate degree program in nursing education is not affected by sensitivity training was accepted although the trend was in favor of the experimental group in all comparisons. It was concluded that sensitivity training was effective in important aspects of nursing education in the programs studied. (JK)

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The League Exchange

Number 86

A STUDY OF SOME EFFECTS OF SENSITIVITY TRAINING ON THE PERFORMANCE OF STUDENTS IN ASSOCIATE DEGREE PROGRAMS OF NURSING EDUCATION

by

DORIS ARLENE GEITGEY

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A STUDY OF SOME EFFECTS OF SENSITIVITY TRAINING ON THE PERFORMANCE OF STUDENTS IN ASSOCIATE DEGREE PROGRAMS OF NURSING EDUCATION

An Abridgement of a Dissertation Submitted at the
University of California at Los Angeles in Partial
Satisfaction of the Requirements for the Degree of
Doctor of Education

by

Doris Arlene Geitgey, Ed.D.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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THE LEAGUE EXCHANGE

The League Exchange was instituted as one means for the sharing of ideas and opinions. Many other means are, of course, available--notably, biennial conventions, national and regional conferences, and meetings of state and local leagues for nursing. Further opportunities for the exchange of knowledge and information are afforded in Nursing Outlook, the official magazine of the National League for Nursing, and in other professional periodicals.

It is recognized, however, that the time available at meetings and the pages of professional magazines are limited. Meanwhile, the projects in which NLN members are engaged and which they should be sharing with others are increasing in number and scope. Many of them should be reported in detail; yet, such a reporting would frequently exceed the limits of other media of communication. The League Exchange has been instituted to provide a means for making available useful materials on nursing that would otherwise not be widely available.

It should be emphasized that the National League for Nursing is merely the distributor of materials selected for distribution through the League Exchange. The views expressed in League Exchange publications do not represent the official views of the organization. In fact, it is entirely possible that opposing opinions may be expressed in different articles in this series. Moreover, the League assumes responsibility for only minor editorial corrections.

It is hoped that NLN members will find the League Exchange useful in two ways: first, that they will derive benefit from the experience of others as reported in this series, and second, that they will find it a stimulus to the dissemination of their own ideas and information. There are undoubtedly many useful reports that are as yet unwritten because of the lack of suitable publication media. NLN members are urged to write these reports and submit them for consideration for publication as a League Exchange item.

To the extent that all NLN members draw from, and contribute to, the well of nursing experience and knowledge, we will all move forward together toward our common goal--better nursing care for the public through the improvement of organized nursing services and education for nursing.

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Chapter I

THE PROBLEM, THEORETICAL CONCERNS, AND PLAN OF THE STUDY

The great concerns of the public, the nursing profession, and related disciplines regarding the improvement of nursing care to all patients are reflected in the professional literature, in legislation providing assistance for study and research in nursing, and in the formation and work of committees such as the Surgeon General's Consultant Group on Nursing. Some of the problems causing concern are: the acute and chronic shortage of nurses; the attrition rate among nurse students; the rapid and vast technological changes affecting the medical and nursing care of patients; the changing patterns of hospital and home care; and the definition and measurement of the quality of nursing care provided to patients.

One alleviating factor in the problem of nurse shortage has been the very rapid development of junior or community college programs for the preparation of technically competent nurses. In California, for example, 32 such programs were founded from 1952 to 1966, with the great majority having been established since 1957. The number of nurses who have been graduated from these programs is now over 2,000. Although technical competence and safe nursing are the major goals of the junior college programs in nursing education, part of the program of study must be geared to the understanding and improvement of human relations in nursing in order to improve the quality of nursing care and increase the satisfactions that derive from the practice of nursing. This study is related to an examination of the effects of human relations training of students in 3 of the California junior college programs in nursing education.

The Problem

Statement of the problem. This study was concerned with the effects of sensitivity training on the performance of students in associate degree programs of nursing education. More specifically, it was the purpose of this investigation to determine how such training affects:

1. The quality of nursing care given by the students.
2. The interpersonal relations of the students with patients, teachers, and peers.
3. The grades attained by the students in nursing courses.
4. The attrition rate of the students during the first year of their nursing education programs.

The study was undertaken because answers to these questions could not be derived from the current literature available in the area of sensitivity training.

Importance of the study. The significance of this investigation is related primarily to four areas: improved nursing care of patients, reduction of the attrition rate of students in associate degree programs of nursing education, improved interpersonal relationships of students with others, and the implications for similar studies in other disciplines, especially in high schools and colleges.

Sensitivity training presents one means for improving nursing care of patients. If the student develops awareness of patients as individuals and thus is more sensitive to their needs, she may be able to plan and provide more appropriate nursing care to meet those needs. Sensitivity training has two goals, both of which relate directly to this aspect of nursing: (1) the development of the ability to accurately sense what others think and feel and (2) the ability to behave appropriately in a variety of interpersonal situations. (29, p. 11) In sensitivity training, each participant has opportunities to: (1) learn more about himself and his impact on others, (2) understand his own feelings and how they affect his behavior toward others, (3) develop more awareness of the ways people communicate with each other, and (4) learn "active" listening for meanings and feelings. (29, p. 11) Since the nursing profession is one in which intense interpersonal relations are recurrent, and since knowledge of self and skills in communication are essential for the most effective use of the self in a therapeutic way, effective sensitivity training could lead to the development of more appropriate behaviors of students in the nurse-patient relationship.

Sensitivity training offers a way for diminishing the attrition rate of students in nursing programs. The national attrition rate for many years has remained at approximately 33 percent. A decrease in this rate would provide more nurses for employment and would lessen the cost of nursing education programs in relation to loss of time, effort, and finances for the student, the nurse educator, and the educational institution. Because associate degree programs are in essence two years in length, the first year is seen as being the crucial period for the lowering of the attrition rate. It may be hypothesized that it is during the first year that students develop the feelings of insecurity, inadequacy, or dislike for nursing practice to the extent of dropping out of the program. It is during this period that the students have their first patient contact, that they first observe the practice of nursing in hospitals, that they discover that the study of nursing is a longer educational program than most associate degree programs, and that there may be disagreement among faculty and nurse practitioners about what good nursing means. Menzies, in her study of a hospital system in England (18), found that the attrition rate of student nurses ranged from 30 to 50 percent. Much of this attrition was due to unresolved anxieties associated with the feelings that "no one cares," "no team spirit," and lack of support through small group teaching related to students' first experiences with patients and the resultant emotional reactions. Her findings appear comparable to those hypothesized above. Sensitivity training, along with other methods such as the postlaboratory conference employed by many of the associate degree faculties, provides opportunities to resolve such anxieties and concerns before they become so intense that the student cannot tolerate them. Moreover, sensitivity training provides an opportunity to develop group cohesiveness that is supportive of the members during periods of stress.

This study has significance for other areas in education, as well as for nursing education, especially in relation to the attrition rates in high schools and colleges. The dropout rate among students has become a problem of serious proportions nation-wide. If sensitivity training is effective in diminishing the attrition rate among nurse students, then other disciplines may become interested in conducting similar studies and training for their students.

Definitions of Terms

For the purposes of this study, the following definitions were accepted:

Attrition rate (dropout rate). The number of students not completing the first year of study divided by the number originally enrolled in the program.

Behavioral flexibility. The ability of individuals to behave in an appropriate manner in a variety of interpersonal situations.

Control group. Those students involved in the study who experienced neither sensitivity training nor human relations through the lecture-discussion method prior to the beginning of their nursing education program in September, 1964.

Experimental group. That group of students involved in the study who experienced sensitivity training prior to their nursing education program.

Interpersonal relations. The relationship of one person with another or others that resulted from one or more verbal and/or nonverbal interactions with each other.

Nursing care. The direct ministrations of the student to the patient designed to meet the observed needs of the patient within the limits of the student's preparation.

Sensitivity training. The experience in achieving social awareness in a nondirective, permissive small-group environment wherein every participant had opportunities to express his own ideas and feelings and to react to the communications and behavior of others within the group.

Social sensitivity. Awareness of one's self in relation to the effect of one's verbal and nonverbal behavior on others; the ability to sense accurately what others think and feel.

Volunteer control group. Those students who volunteered for human relations training prior to the beginning of their nursing education programs and who were assigned on a random basis to the group receiving human relations training by means of the lecture-discussion method.

Assumptions, Limitations, Objectives, and Methods

Statement of assumptions. Assumptions underlying this study were that: (1) the quality of nursing care is influenced by the interpersonal relations between patient and nurse; (2) awareness of patient needs, expressed either in an overt or a covert manner, aids the nurse in planning and providing nursing care to meet those needs; and (3) the performance of students in relation to class content, as shown by paper-and-pencil tests and class participation, is dependent to a considerable extent on understanding of verbal and nonverbal communications.

Recognition of limitations. This study was limited to investigation of the effects of sensitivity training on students enrolled in associate degree programs in nursing in three California junior colleges. The effects of sensitivity training studied were: (1) the effects on the planning and implementation of nursing care based on recognition of patients' needs; (2) the effect on grades in courses related specifically to nursing content; (3) the effect on the development of effective interpersonal relations with patients, peers, and instructors; and (4) the effect on the attrition rate during the first year of the program in nursing education in the three colleges selected for the study.

Objectives of the study. The principal objectives of this study may be stated as four hypotheses. These hypothesize positive relationships between sensitivity training and (1) nursing care, (2) interpersonal relations of students, and (3) grades in nursing courses, and a negative relationship between sensitivity training and the attrition rate of students during the first year of their nursing education programs.

Null hypotheses, derived from the above, may be stated in the following form:

1. Sensitivity training for students in associate degree programs of nursing education has little or no effect on the quality of nursing care they provide as evaluated by nurse instructors and patients.
2. The interpersonal relations of students with patients, teachers, and peers are not affected by sensitivity training of students.
3. The grades attained by students in nursing courses are not influenced by sensitivity training.
4. The attrition rate of students in the first year of their associate degree programs of nursing education is not affected by student experience in sensitivity training.

Methods used. The concerns of this study were seen to be to a large extent the result of inadequacies in communication skills, understanding of self and others, recognition of the effect of self **on others**, and behavioral flexibility. These inadequacies result in anxieties that diminish the effectiveness of the performance of students, as indicated in the study by Menzies. (18) The purpose of sensitivity training, as indicated in the literature, is to provide opportunities in small groups for improvement in these areas of inadequacy. It seemed, therefore, particularly appropriate to utilize sensitivity training for students in associate degree programs of nursing education before they were involved in the anxiety-producing activities of nursing and during the crucial period in which they learned to cope with these activities.

On the basis of this rationale, intensive sensitivity training of 30 hours (one week) duration was provided by the investigator to experimental groups in each of three California junior colleges prior to the beginning of class in September, 1964. The initial training was supplemented by one day of follow-up training per month for four months--October, 1964, through January, 1965. During the period of the intensive sensitivity training for the experimental group, a volunteer control group in two of the three schools received training in human relations through lecture-discussion meetings conducted by qualified psychiatric nursing instructors. A control group in each school was selected on a random basis from the balance of the students. At the close of the summer session, August, 1965, data related to evaluation of nursing care, interpersonal relations, grades in nursing courses, and attrition rates were collected and analyzed. Since the attrition rate is highest during the first year of classes, and because approximately one-half of the nursing classes were completed by that time, it was believed that the data collected over this crucial time period were adequate for the purposes of this study.

Organization of the Study

The balance of the study is organized in the following manner. Chapter II deals with the literature related to the major concerns of the study. It includes reports on literature related to sensitivity training, verbal and nonverbal communications, measurement of interpersonal relations, and interpersonal relations in nursing. Chapter III describes in detail the procedures used in the study, including the general design, population and sample, data and tools, and methods of analysis. Findings and analysis of data are presented in Chapter IV, while Chapter V presents some other observations and questions raised during the study that were not included in the four major aspects of the experiment. These observations include reported causes of anxiety and responses to sensitivity training by members of the experimental groups. Conclusions, implications of the study, and recommendations for further research are discussed in Chapter VI.

Chapter II

A REVIEW OF RELATED LITERATURE

The history of groups and group functioning goes back to the far distant past when early nomadic tribes worked and lived together for safety and survival. Research on groups, however, is a relatively recent development, particularly associated with the past quarter-century. Today there is widespread recognition that facts about groups can only be established through use of scientific, objective methods of observation, measurement, and experimentation.

Such investigations are now being conducted by individuals in many disciplines under the auspices of universities and business in ever-increasing numbers. Results of these investigations are scattered widely in numerous publications. Efforts now are being made to collect and organize the literature into books--e.g., Cartwright and Zander, Group Dynamics: Research and Theory. (9) Another collection, Hare, Borgatta, and Bales: Small Groups: Studies in Social Interaction (14) not only presents selected literature pertaining to groups but also provides an excellent annotated bibliography of approximately 580 titles.

For the purpose of this study, efforts have been made to select those reports in the literature that deal most directly with four aspects: (1) sensitivity training, (2) verbal and nonverbal communications, (3) the measurement of interpersonal relations, and (4) interpersonal relations in nursing. These four aspects were selected because they provided information that dealt directly with the problem under investigation or with the development of the tools used in this study.

Literature Related to Sensitivity Training

Much of the research concerned with sensitivity training has been conducted by the Human Relations Research Group, located within the Institute of Industrial Relations and the Graduate School of Business Administration of the University of California, Los Angeles. This group, formed in 1950, has devoted much of its effort to the description and evaluation of a type of human relations training that it designated as "sensitivity training." (25, p. viii) Many of the findings of the group are reported in a selected collection of writings entitled Leadership and Organization. (25)

Tannenbaum, Weschler, and Massarik indicate that "people vary in their social sensitivity and behavioral flexibility." (25, p. 119) This statement implies that some people are able to perceive and assess accurately the facts on which judgments are to be made, while other individuals lack these abilities. In addition, some people can adapt their behaviors to meet changing situations, while others behave in rigid, fixed ways. The purposes of sensitivity training, therefore, are seen to be, first, "to increase a person's sensitivity to and knowledge about personal and interpersonal factors and their influence on thought and action, and, second, to help him in his efforts to behave more effectively in different and changing interpersonal relationships." (25, p. 119) The authors continue:

> Our experience with sensitivity training tends to confirm the old maxim that "knowledge makes men free." As participants appear to gain in understanding of themselves, others, and social pressures to conform, they tend to become more aware of their own individual strengths, to distinguish between real and imaginary pressures, and increasingly to speak and act as free, strong, and considerate individuals. To the extent that they attain these growth objectives, we believe, they are able to function more creatively, productively and comfortably as individuals and in group situations. (25, p. 119)

Sensitivity training is seen primarily as a small group experience, where there is freedom for a high level of individual participation and involvement, intended to establish free and open communication as a basis for productive learning. The small group discussions may be supplemented by general sessions, theory presentations, film forums, and other similar devices.

> The ethical values of sensitivity training can be inferred from the following underlying assumptions upon which it is based: first, the essential direction and resources for personal improvement lie within the trainees themselves; second, the function of the trainer is primarily to help create the conditions under which the most effective growth and development can take place; third, no attempt is made to tell the participants whether to change and how to change. They are helped to see themselves more objectively; then if they are dissatisfied with certain aspects of their attitudes or behaviors, the decision to change and the direction of change are matters for their own choice.
>
> Sensitivity training appears to provide a participant with opportunities to learn more about himself and his impact on others, to understand his own feelings and how they affect his behavior toward others, to become more sensitive to the ways people communicate with each other, to learn "active listening"--for meanings and for feelings, to learn how people affect groups and how groups affect people, to behave more realistically in face-to-face situations with another and in groups, and to learn how to help groups function more effectively. (25, p. 120)

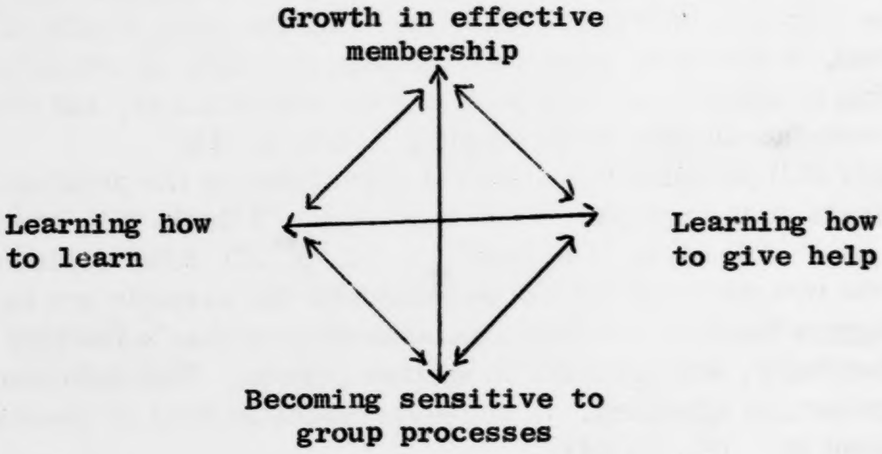
In discussing the goals of sensitivity training, the authors indicate that interpersonal understanding and skills are essential for effectively dealing with others. They stress the importance of both social sensitivity (empathy) and behavioral flexibility. (25, p. 125) They describe in detail the nature of sensitivity training, the role of the trainer, and phases of group development. They also suggest areas for future research, one of which is, "Can personality and behavioral changes in the trainees be traced to sensitivity training?" (25, p. 237) They state, "It would therefore seem desirable to proceed with a program of rigorously controlled experimentation stemming from appropriate hypotheses and providing for experimental groups (and their replication) and a variety of control groups." (25, p. 237) The present investigation is one effort to use the concepts of sensitivity training presented by Tannenbaum, Weschler, and Massarik (25) in a controlled experimental situation.

Weschler (29) points up the need for creative people in all walks of life. He identifies the creative individual as one who possesses the following attributes: (1) sensitivity to surroundings, (2) mental flexibility, (3) independence of judgment, (4) tolerance for ambiguity, (5) ability to abstract, (6) ability to synthesize, and (7) a restless urge. (29, pp. 2-3) After describing blocks to creativity in individuals, Weschler indicates that creativity can be developed through training. He describes sensitivity training as one type of learning experience that can lead to greater creativity. (29, p. 11) He explains that in sensitivity training, ". . . *the process* (the 'how') rather than the *content* (the 'what') receives greater attention." (29, p. 11)

Buchanan (8, p. 2) presents five principles related to human behavior: "1) behavior depends on *both* the person and his environment; 2) each individual behaves in ways which *make sense to him;* 3) an individual's *perception of a situation* influences his behavior in that situation; 4) an individual's *view of himself* influences what he does; and 5) an individual's behavior is influenced by his *needs,* which vary from person to person and from time to time." After discussing these principles in some detail, Buchanan indicates there are some useful guidelines to improving individual motivation. Three of the six guidelines can be related directly to sensitivity training: (1) understanding one's own motivation helps one to understand other people; (2) the more we can help another person to feel comfortable in examining his own point of view and how he arrived at it, the more we help him to behave rationally, flexibly, and creatively; and (3) unless they are blocked, people tend to change their point of view (and thus their behavior) in the light of "feedback" (reactions of others to their behavior). (8, p. 10)

Bradford (7, p. 191) indicates that learning in a training group may be focused on a number of emphases: ". . . on the development of cultural norms in the group; on the process of social organization; on the dynamics of group behavior; on interpersonal relationships; on individual perceptions and motivations; or on individual and group values. Data about all of these aspects of human behavior--far more than can be utilized --are generated in the T Group." Bradford states:

> . . . the purposes of the T Group interact in the following manner:


Growth in effective membership
Learning how to learn
Learning how to give help
Becoming sensitive to group processes

> The integration of these purposes and their interactive influences on one another comprise some of the major purposes of the T Group. (7, p. 215)

Bradford thus has identified the goals of training as learning how to learn, learning how to give help, developing effective group membership, and developing sensitivity to group processes.

Bowers and Soar (6) described the results of laboratory training in human relations for a group of elementary school teachers. Twenty-three teachers were involved as the experimental group, with an additional group of 28 acting as controls. All were volunteers for the program. The study indicated that sensitivity training could be a valuable part of teacher education programs if those involved as participants presented specific personality and attitude characteristics as measured by the Minnesota Multiphasic Personality Inventory.

Literature Related to Verbal and Nonverbal Communication

Whenever people talk to one another, communication problems are almost certain to arise. Since improvement of communication skills is a major goal of sensitivity training, these problems within the training group provide "grist for the mill" in skill development. It was concluded, therefore, that relevant literature concerned with communication, both verbal and nonverbal, should be reviewed.

Rogers (22) points out what to him seems one of the major factors in blocking or impeding communication and then presents an important way to improve or facilitate communication. He describes the barrier as being the tendency to judge or evaluate the statements of others from one's own point of view. He further states that "Although the tendency to make evaluations is common in almost all interchange of language, it is very much heightened in those situations where feelings and emotions are deeply involved." (22, p. 29) He emphasizes that "This tendency to react to any emotionally meaningful statement by forming an evaluation of it from our own point of view is . . . the major barrier to interpersonal communication." (22, p. 29)

As Rogers (22, pp. 29-30) sees it, the barrier of evaluation is overcome or avoided when one listens with understanding. He describes four obstacles that diminish the ability to listen with understanding: (1) the need for courage, (2) heightened emotions, (3) the size of the group, and (4) the lack of faith in social sciences. To summarize, Rogers states, "The solution is provided by creating a situation in which each of the different parties comes to understand the other from the other's point of view. This has been achieved, in practice, even when feelings run high, by the influence of a person who is willing to understand each point of view empathically, and who thus acts as a catalyst to precipitate further understanding." (22, p. 31)

Roethlisberger (22) presents two different approaches to the problem of miscommunication by analysis of an example: " 'The boss says, "I think, Bill, that this is the best way to do your job." Bill says, "Oh yeah!" ' " (22, p. 32) After discussing the assumptions on which the two different ways of working with the example are based, Roethlisberger states, "The biggest block to personal communication is man's inability to listen intelligently, understandingly, and skillfully to another person. This deficiency in the modern world is widespread and appalling. In our universities as well as elsewhere, too little is being done about it." (22, p. 34)

Tannenbaum, Weschler, and Massarik (25) describe communication as the link between the perceiver and the perceived. They indicate that ". . . the sending and receiving of messages (involving feelings as well as content) becomes raw material underlying the process of understanding others." (25, p. 62) They describe the importance of the communicator's sending meanings, or ideas, without distortion, so that the communicatee will interpret the message as the communicator transmits it. (25, p. 28) They further state that "Communication serves as the process through which influence is exerted." (25, p. 33) Both "sending" and "receiving" skills are involved in interpersonal relations. (25, pp. 130-131)

Lee (17) investigated problems in communication over a five-year period, during which time he observed more than 200 actual group meetings, watched conflicts arise, worked out techniques for averting them, and tested out his findings with the cooperation of leaders in subsequent meetings. He reported on the activities of groups in which members were so stimulated they did not want to stop. Out of the 200 groups, that phenomenon occurred 16 times. "They were memorable occasions." (17, p. 122) Lee identified the factors involved in these occasions as: (1) the leader worked with the group, not on them; (2) no one presumed to know it all; (3) the members were more interested in the accomplishments of the group than in individual exploits. (17, p. 122)

Lee (17, pp. 1-10) itemized the problems in communication as follows:

1. Misunderstandings result over meanings of words; people talk past each other.
2. Trouble results when one contradicts another without understanding what the first person was talking about.
3. People become disagreeable about disagreements.
4. People prescribe for problems rather than describing them.
5. Solution of problems is made more difficult in a group where some members look at problems as if they were just like those solved before and others as if the problems were completely new and different.
6. Conflicts arise when members meet head on with the idea of satisfying their individual needs regardless of the needs of others.
7. Stigmatizing names or labels can stop or deter analysis of problems.
8. Conflicts result when a difference of opinion is seen as a personal attack.
9. Anger presents a crisis.
10. A tired leader may create problems.
11. A group under pressure may settle for easy and inadequate solutions.
12. Too many leaders work on, rather than work with, the group members.
13. Few leaders can handle all their responsibilities with equal effectiveness; leaders need help.

The problems identified by Lee are indicative of the interpersonal conflicts that can be examined (and hopefully, resolved) in sensitivity training sessions as they arise within the group.

Johnson (16) presents a diagram expressing the process of communication. He indicates that there are at least ten interrelated stages and that communication is related primarily to inner states. He reviews Lee's findings as related to the diagram and comments that ". . . the ability to respond to and with symbols would seem to be the single most important attribute of great administrators. . . . Mr. A talking to Mr. B is a deceptively simple affair, and we take it for granted to a fantastic and tragic degree. . . . We have yet to learn how to use the wonders of speaking and listening." (16, p. 1) Johnson indicates that feedback is crucial in determining the administrator's effectiveness in maintaining good working relationships with his associates. (16, p. 8)

Leslie This (26) describes three casually developed "theories" that result from miscommunication: the "decibel" theory, the "sell" theory, and the "minimal information" theory. He points out that there are at least six messages involved in any communication, discusses the need for a fresh approach to communication, and diagrams the complexities of communication, with stress on the "arc of distortion." (26, pp. 6-7) He lists seven barriers to communication: (1) the nature of the organization, (2) defects in the formal communications network, (3) status and role ambiguities, (4) language barriers, (5) personality clashes, (6) misunderstanding, and (7) emotions and feelings. (26, pp. 7-8) He then compares the advantages of one-way and two-way communications and presents six guidelines to improve communications as related to the barriers he described. (26, p. 10)

Festinger (11) presented a series of hypotheses to account for data on informal social communication that had been collected in a number of studies. He related the hypotheses to three sources of pressure to communicate: (1) pressures toward uniformity in a group, (2) forces to locomote in a social structure, and (3) pressures arising from the existence of emotional states. Festinger cited findings to support his hypotheses related to the first two sources of pressure but indicated that data were lacking to support hypotheses regarding the third source.

Ruesch and Kees (23) provided an excellent analysis of nonverbal communications, with pictorial documentation of the importance of this kind of communication. They indicated that communicative behavior is observed in four different settings: (1) intrapersonal, (2) interpersonal, (3) group, and (4) societal. (23, p. 5) They stated that the functions of communication include perception, evaluation, and transmission and expression of information. (23, p. 6) In conclusion, they presented ideas tending toward a theory of nonverbal communication. (23, pp. 189-197)

Literature Related to the Measurement of Interpersonal Relations

The initial effort to utilize a sociometric approach to the problems of interpersonal relations was made in 1931 by Moreno and Jennings. (15, p. 64) The test, devised by Moreno and adapted by Jennings, was utilized to study interpersonal relations among school children as indicated by preference for seating proximity. Results of the study were reported by Moreno in 1934 under the title, Who Shall Survive? A New Approach to the Problem of Human Interrelations. Jennings points out that ". . . the choices in sociometric testing are always related to the life situation of the subject." (15, p. 64)

Since its introduction, the sociometric test has been used widely as a means of determining the social organization and interactions of groups and individuals. Barker (3) found that immediate response among strangers differed significantly from chance, that choices showed a tendency to persist, and that shifting of choices was greater for the least chosen than for more chosen individuals. Criswell (10) applied sociometric techniques to the study of racial cleavage in the public schools of New York and found a lessened frequency of positive responses passing between individuals of a different race from kindergarten through the fifth grade. Tagiuri (24) utilized the sociometric method to study the social perceptions of 676 adolescent boys in a large preparatory school. In addition to the usual method of sociometric choice and rejection, he added a "guessing," or perceptual component, to his technique, so that the boys described their perceptions of their social field. The results in the 30 groups studied showed strong congruency between the perception of the social field and the social field itself.

Blocker, McCabe, and Prendergast (5) developed a programmed method for the sociometric analysis of four dimensions--communication, reliance, attributed influence, and authority--within a college staff system. The purposes of their study were to ". . . (1) develop a theoretical framework within which the informal organization can be studied, (2) develop a statistical design which will provide empirical data about an organization and groups within that organization, and (3) develop an instrument and computer program which would secure and process the obtained data in a reliable and efficient manner." (5, p. 8) They indicate that the electronic computer is an indispensable tool for sociometric studies. The instrument and the computer program are reported in the study.

Others who have used the sociometric and near-sociometric approach include Lippitt, Lewin, Lundberg, Newcom, Roethlisberger and Dickson, and Whitehead. The validity and reliability of Moreno's technique has been well-demonstrated by these and other investigators. Moreno (19) has edited a volume of collected papers which serves as an excellent overview of sociometric thinking and practice. Included are numerous papers related to the history of sociometry, approaches to sociometric measurement and research, and the role of sociometry in the development of the social sciences.

Literature Related to Interpersonal Relations in Nursing

In contrast to the quantity of literature available in other facets of this review, the amount of research done in this aspect is quite limited. The study by Menzies (18) is, perhaps, most closely associated with the present investigation. In this study, in an English hospital with a very good reputation for nursing care, 70 nurses were interviewed, observational studies were done on operational units, and many informal contacts were made. Findings indicated a ". . . high level of tension, distress, and anxiety among the nurses." (18, p. 97) Withdrawal from duty was common; 30 percent to 50 percent of the students did not complete their training; many job changes were made; much postgraduate training was undertaken; and sickness rates were high, especially for minor illness. It was apparent that sources of anxiety and the problems and results related to those anxieties were intrapersonal and interpersonal in nature.

Abdellah et al (1, pp. 16-17) have identified, through the critical incident technique, 21 major problems around which nursing care of patients may be planned. Of these 21 problems, 7 are associated with interpersonal relations. They are:

1. To identify and accept positive and negative expressions, feelings, and reactions.
2. To identify and accept the interrelatedness of emotions and organic illness.
3. To facilitate the maintenance of effective verbal and nonverbal communication.
4. To promote the development of productive interpersonal relationships.
5. To facilitate progress toward achievement of personal spiritual goals.
6. To create and/or maintain a therapeutic environment.
7. To facilitate awareness of self as an individual with varying physical, emotional, and developmental needs.

These problems were related to patient needs in the interpersonal relationships area by the authors, and they were seen as important needs of students as well by this investigator in the current study. They were seen also as providing helpful guidelines for students to plan patient-centered care.

Bernstein, Turrell, and Dana (4) utilized the 20-card Thematic Apperception Test to study 67 sophomore nurse students at the University of Colorado School of Nursing in an effort to assess personality correlates associated with the choice of nursing as a career. The findings indicated that the nursing students ". . . were relatively more disturbed in their interpersonal relationships" than were the subjects of Eron's normative data for women. (4, p. 222) The authors speculated that this finding ". . . suggests that nursing students, as a group, have not had satisfying and lasting relationships with the important persons in their lives, primarily the parents. . . . By entering the field of nursing, relationships with patients are relatively short-term and superficial, and yet partially serve the student's needs for approval." (4, p. 223) It seemed that this finding had special significance in relation to the present study in emphasizing the need for productive interpersonal relations.

In reporting the effectiveness of a course entitled "Group Psychology" at the Boston University School of Nursing, Garner and Lowe (12) described the results for 66 subjects--30 in the experimental group and 36 in the control group. The subjects were graduate students in the psychiatric and the maternal and child health nursing programs. The results revealed changes in the experimental group toward greater self-awareness that the investigators believed ". . . tend to confirm the usefulness of the group experience for the professional growth of the nurse." (12, p. 150)

Thompson, Lakin, and Johnson (27) reported a process study of sensitivity training for 11 students of nursing at Duke University. A total of 15 hours over a 10-day period was devoted to sensitivity training for fourth-year students in the course of their psychiatric nursing experience. The authors reported that "Diary results indicated that the experience did impel students to look at their behavior and to consider areas of needed study and alteration." (12, p. 137)

A small pilot study by Geitgey (13) showed that the ability of members of the faculty of an associate degree program of nursing education to communicate understanding to a patient was increased following sensitivity training. Attitudes changed in the direction of becoming more democratic, and subjects stayed with the patient longer. Paper-and-pencil tests and a role-playing situational exercise were utilized in the study. A psychologist, a nursing instructor from another college in the area, and the investigator observed and rated the nurse-patient interactions in the role-play, both before sensitivity training and six months later. Average total scores for the group of six increased from 75 to 89.83 (total possible score = 105). Other indications of the importance of interpersonal relations in nursing are found in the works of Orlando (20) and Peplau. (21)
It is apparent from the studies cited that interpersonal relations in nursing present serious challenges to the nurse educator, nurse practitioner, and nurse researcher alike.

Summary

This review of related literature has included studies related to sensitivity training, to verbal and nonverbal communication, to the measurement of interpersonal relations, and to interpersonal relations in nursing. It has provided background information and some support for the current investigation.

Chapter III

PROCEDURES USED IN THE STUDY

The purpose of the study was to determine the effects of sensitivity training on the performance of students in associate degree programs of nursing education, especially in regard to quality of nursing care; interpersonal relations with patients, teachers, and peers; attrition rate of students in the first year of the educational program; and grades in nursing courses. To achieve the purpose, the proposed study was described to administrators and nursing faculty members of three California junior colleges, and their approval for utilizing their programs was obtained. Comparisons were made between the experimental group and the volunteer control group and the control group on the variables of nursing care, interpersonal relations, grades in nursing courses, and attrition rates.

General Design

The plan of the study was to seek student volunteers for training in human relations from all individuals who had been accepted as freshman students in the three nursing programs. One week (five days, six hours per day) was scheduled for training purposes prior to the beginning of classes in the fall semester of 1964. This time schedule allowed students to attend training sessions without interfering with their scheduled formal class work, which could have presented an uncontrolled variable in the results of the study. The initial week of training was supplemented by one day of follow-up training per month for four months--October, 1964, through January, 1965. This training was scheduled for either Saturday or Sunday--again, so that there would be no interference with formal class work.

The number of students to be involved in sensitivity training in each school was limited to a maximum of 15, so that small group dynamics could be effective. Since it was anticipated that more than 15 students would volunteer for training in each of the schools, a program of human relations training by the lecture-discussion method was planned for the number exceeding 15. Qualified psychiatric nursing instructors, not affiliated with the schools involved in the study, were selected to conduct these programs. The investigator conducted the sensitivity training sessions in all three schools.

Data collection was planned to extend over the first year of the educational programs--from September, 1964, to August, 1965. Sociometric tools were utilized to measure interpersonal relations with patients, teachers, and peers; patients were asked to respond to questions related to the quality of nursing care they received from the students; faculty members agreed to share anecdotal notes related to student performance and nursing care with the investigator; and official records were made available to determine the grades in nursing courses and the attrition rates in each school. Only the investigator knew which students were involved in the study.

It was planned to complete collection of data at the close of the summer session, August, 1965. By this time, approximately one-half of the nursing courses would be completed and the attrition rate, consistently highest in the first year of nursing programs, could be evaluated.

Population and Sample

Schools selected. The three California junior colleges selected for the study were San Jose City College, Los Angeles Valley College, and Fullerton Junior College. These schools provided a geographical spread within the state of California, offered varying socioeconomic backgrounds among the students, and included different opportunities for nursing education in each region.

San Jose City College is located in an area of relatively high unemployment (at the time the study was begun) and is one of three schools of nursing in a city of 250,000 population. One of the other schools of nursing is a baccalaureate program in a state college, and the second is a diploma program in a private hospital. All three schools compete for students interested in nursing. San Jose City College, believing in the "open-door" policy of student admissions, has fewer restrictions on admission than do the other two programs. Because the cost of education is less, the City College program tends to attract students who cannot afford the more expensive program. Most of the student contacts with patients are in the county hospital and a nearby state hospital. The freshman class in nursing was composed of 51 students, including 5 men, at the beginning of the fall, 1964, semester. The age range of the students was from 17 to 51 years.

Los Angeles Valley College is one of three nursing education programs in the huge metropolitan area of West Los Angeles and the San Fernando Valley, the other two being the baccalaureate programs of the University of California, Los Angeles, and of Mount St. Mary's College. The student enrollment potential is very large, and students are screened carefully prior to admission to limit the number of students so that the required student-faculty ratio of 8:1 may be maintained. The socioeconomic status of the general population is one of moderate incomes and a cross section of cultural backgrounds, as would be expected in such a large metropolitan area. The program in nursing education served as a demonstration center in a recent five-year project related to junior college education in nursing (the Kellogg Project). All faculty members are required to hold a Master of Science degree in their nursing specialties. Most of the students' clinical experiences are provided in relatively new, medium-sized private hospitals located in the Valley area. The freshman class in nursing at the beginning of the fall, 1964, semester was composed of 85 students, including one man. The age range of the students was from 17 to 50 years.

Fullerton Junior College is located in the relatively prosperous area of Orange County. There are several other junior college nursing education programs in the general area, but no other program within the Fullerton Junior College District. Students receive their clinical experiences in the Orange County Hospital and a medium-sized private hospital. The program in nursing education originally was conducted as a diploma program by the Orange County Hospital. At the beginning of the fall, 1964, semester, the freshman class in nursing was composed of 47 students, all females. The age range of the students was from 17 to 49 years.

In the first week of July, 1964, letters were sent to all enrollees in the three schools asking them to volunteer for participation in a 30-hour workshop in "human relations training," with the understanding that participation was not mandatory in any sense. A total of 62 students volunteered for the training program--26 from San Jose City College, 25 from Los Angeles Valley College, and 11 from Fullerton Junior College. As the letters of acceptance were received by the investigator, they were sorted according to school, and every other letter for each college was allotted to the experimental group. The remaining letters were assigned to the volunteer control group.

Because of the small number of volunteers from Fullerton Junior College, the volunteer control group was deleted and all 11 were assigned to the experimental group. To increase the number in the total experimental group, two additional letters were drawn from the Los Angeles Valley College volunteer control group and placed in the experimental group in that school.

The experimental group. The experimental group, as finally constituted, was composed of 39 students: 11 from Fullerton Junior College, 15 from Los Angeles Valley College, and 13 from San Jose City College. The age range was: San Jose City College, 17-49; Fullerton Junior College, 17-43; and Los Angeles Valley College, 17-51. One man in the San Jose City College program volunteered for training and was included, by lot, in the experimental group. (See Table 1 for composition of the groups.)

Of the 39 students in the experimental group, 11 were married (10 with children), 2 were divorced (both with children), 1 was a young widow with three children, and 25 were single. Seven worked part-time, and 2 worked full-time on the night shift. Four of the group, all at San Jose, were accepted on a probationary basis for reasons other than grades. High school grades were comparable, generally, with those of students in the volunteer control group and the control group. The treatment provided the experimental group was the sensitivity training program described above.

The volunteer control group. The volunteer control group--those who volunteered for human relations training and received such training by the lecture-discussion method--numbered 23: 10 at Los Angeles Valley College and 13 at San Jose City College. The age range for the group was 17-50 at Los Angeles Valley College and 17-49 at San Jose City College. There were no men in this group.

Of the 23 students, 6 were married and had children, 1 was a divorcee with one child, and 16 were single. Two worked part-time. One student in the San Jose program was accepted on probation for reasons other than grades. This group was designed to serve as a control for the bias of volunteering; i.e., that any differences found in the comparisons of the groups would be the result of training, rather than of volunteering.

The control group. The control group was obtained by first deleting the names of all volunteers from the three class lists and then selecting a number equivalent to the number in the experimental group from the remaining names. At Fullerton Junior College, every third person remaining on the class list was selected, resulting in 13 students in the control group. At Los Angeles Valley College, every fourth student was selected--a total of 15 students--and at San Jose City College, every other student was placed in the control group--a total of 13, including 4 men. The overall control group was thus composed of 41 students in comparison with 39 in the experimental group, the 2 extra ones being those from Fullerton (13 in comparison with 11 in the experimental group). No effort was made to match subjects.

Of the 41 students, 13 were married, 12 had children, and 28 were single. Seven worked part-time; none worked full-time. None was accepted on probation.

The control group members were given no additional training in human relations. They did receive the concepts of human relations and mental health provided in nursing courses and in psychology and sociology courses required as part of the nursing curricula.

Data Collection and Analysis

For purposes of collecting data on the interpersonal relations of students with patients, teachers, and peers, and on patient evaluations of nursing care, three forms were devised by the investigator: the "Patient Response" form, the "Student Respondent" form,

Table 1

Composition of Groups in the Three Schools

GROUP	NUMBERS						AGE	RATED BY	RATED BY TEACHERS			RATED BY STUDENTS			REC'D.	DROPPED
	S.J.C.C.		F.J.C.		L.A.V.C.		RANGE	PATIENTS	*R.P. 1	R.P. 2	R.P. 3	R.P. 1	R.P. 2	R.P. 3	GRADES	PROGRAM
	M.	F.	M.	F.	M.	F.										
E.G.**	1	12	0	11	0	15	17-51	28	39	35	26	39	35	26	35	14
V.C.G.	0	13	0	0	0	10	17-50	23	23	23	15	23	23	15	20	13
C.G.	4	9	0	13	0	15	17-50	28	41	39	27	41	39	27	35	18
TOTALS	5	34	0	24	0	40		79	103	97	68	103	97	68	90	45

* R.P. - Rating Period

** E.G. - Experimental Group
V.C.G. - Volunteer Control Group
C.G. - Control Group

and the "Instructor Respondent" form. (See Appendix A for the three forms.) These forms are described below. In addition, data were obtained from official records in relation to grades in nursing courses and attrition rates and from anecdotal records of instructors in relation to the evaluation of nursing care provided by students.

The Patient Response form. The first 6 items of the Patient Response form were included to evaluate interpersonal relations between students and patients; items 7 through 11 to obtain the patient's evaluation of the quality of nursing care provided to him by the student; and items 12 and 13 to determine whether or not responses to the first eleven items might have been influenced by more frequent nurse-patient contact or the sex of the patient. Past experiences of nurse educators in various nursing education situations led to the conclusion that patients tend to see most students as "wonderful" and to protect students from instructors and so may not be objective in their evaluations if they believe that students' grades will be affected negatively. In an effort to overcome these previously observed biases, the instructions to the patients indicated that the students would not be graded on the basis of their answers and that someone other than the instructor would collect the forms to be used in a study for the improvement of nursing education.

All patients who received care from students in two of the three programs and who were able to do so (physically, mentally, and linguistically) were asked to complete the Patient Response form. Because of the large number of Spanish-speaking patients in the major clinical area and the time involved in explaining the purpose of the questionnaire, the Fullerton group did not participate in this aspect of the study. Chi-square was selected as the method for data analysis in relation to the Patient Response form.

The Student Respondent form. The Student Respondent form was designed to determine the interpersonal relations of the subjects with their peers through items related to meaningful real-life situations commonly found in student groups. Each student in each of the three freshman classes involved was provided with an accurate, alphabetical, numbered "List of Students" in the appropriate freshman class. Students were instructed to "circle the numbers corresponding to the students' names on the 'List of Students'" in responding to the questions. Students were allowed freedom to select as many or as few peers as they desired in response to each question. Each response provided a "score" for the student whose number was circled, which could later be included in total scores for each of the three groups being studied. Students completed these forms three times during the year--in October, 1964, in January, 1965, and in August, 1965. The method selected for analyzing the obtained data was the one-way classification of analysis of variance.

The Instructor Respondent form. The Instructor Respondent form was a sociometric tool designed to determine interpersonal relations between students and their teachers, using the same technique as was utilized for investigating peer relations, but with different questions. These forms were completed at the same time periods as were the Student Respondent forms. By the close of the study period, each student in each program had received instruction from each of the freshman class instructors, so multiple responses to students were possible. The data analysis method selected was the analysis of variance procedure.

Data from official records. At the end of the study period, August, 1965, data related to the grades in nursing courses and attrition rate were obtained from the official records of the three schools. Chi-square was the statistical method selected for analyzing attrition rate data. Grades in nursing courses were converted to grade points,[*] the grade point average for each student was calculated, and grade point averages for the three groups--i.e., the experimental, volunteer control, and control groups--were obtained. Total grade points attained by the three groups were compared by means of the analysis of variance method, and grade point averages were subjected to chi-square comparisons. Data from anecdotal records of instructors were compared by utilizing the chi-square method.

The Role of the Investigator in the Sensitivity Training Sessions

The role of the investigator in the sensitivity training sessions was to serve as the trainer. This role included providing a brief discussion of the nature and purposes of sensitivity training as described in the literature, establishing an atmosphere in which the subjects felt free to discuss their feelings and ideas, and serving as a resource person in relation to theories of human behavior.

Early in the intensive training sessions, the investigator felt free to ask a subject how she felt about a communication to her, a lack of response to her communication, or if she could share with the group what her nonverbal communication meant. In this way, the investigator served as a catalyst in developing awareness of group members on the part of other members. Other questions occasionally asked of students by the investigator were, "Would I be interpreting your communication as you mean it if I were to say . . . ?" or, "Are you saying that . . . ?" or, "Am I hearing you right if I say . . .?" These questions demonstrated the need for clarity of communications, ways of clarifying communications on the part of the listener, and ways of stating comments so as to convey the intended idea. As the subjects demonstrated increasing awareness of others and skills in communications improved, such interventions by the investigator were eliminated. At the end of the intensive training session, the investigator asked the students to share with her how they felt about the session and if and how they saw sensitivity training as useful in their future role as nurses. In the follow-up sessions, the investigator participated only to the extent of greeting the students and then stating, "The meeting is yours." Any interventions were similar to those described above, were based on perceived need for intervention, and were exceedingly rare.

Sensitivity training is seen by the investigator as one of three levels of group process, dealing with the "here and now" situation of a particular group on a relatively superficial level, with emphasis on improvement of communications skills within the group and development of awareness of the behavior of others and the individual. Group counseling, seen as the second level in depth in group process, is identified by the investigator as differing from sensitivity training in the emphasis on the gaining of insight into one's behavior, especially in relation to areas of problems for the individual who is capable of functioning in a productive way in the majority of situations in which he finds himself. The third level of group process is identified as group therapy, in which many of the techniques and skills utilized in the first two levels are applied in the treatment of inadequately functioning, emotionally disturbed individuals.

The purpose of the investigator, as the group trainer, was to aid the subjects in improving interpersonal relationships by development of communication skills and awareness of the behaviors of others and the individual. It was anticipated that these skills would be carried over into the nursing situation, but no specific effort was made by the investigator to insure that such would be the case.

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[*] A=4 points/unit, B=3 points/unit, C=2 points/unit, D=1 point/unit, and F=0 points/unit.

Chapter IV

FINDINGS AND ANALYSIS OF DATA

This chapter presents the results of statistical analysis of the data collected in relation to the specific questions of the study. The findings are reported on: (1) the quality of nursing care as evaluated by the patients; (2) the quality of nursing care as evaluated by the instructors; (3) the interpersonal relations of students with patients; (4) the interpersonal relations of students with teachers; (5) the interpersonal relations of students with peers; (6) the grades in nursing courses attained by students; and (7) the attrition rate of students. Data relevant to these questions are reported for the three groups involved--*i.e.*, the experimental group, the volunteer control group, and the control group. Because of the relatively small number of subjects, the level of confidence selected as being statistically significant was .05.

The Quality of Nursing Care

HYPOTHESIS: Sensitivity training for students in associate degree programs of nursing education has no effect on the quality of nursing care they provide as evaluated by nurse instructors and patients.

Patient responses. Two hundred eighty-nine patients answered the questions in the Patient Response form, evaluating 79 students in the three groups. (See Table 1.) Of a total of 1,445 responses, 35 were negative. (Table 2 shows the responses of patients to the five questions involved in evaluating the quality of nursing care.)

Chi-square was used to analyze differences between the experimental group and the volunteer control and control groups. With 487 positive responses and 8 negative responses for the experimental group (N = 28; patients responding, N = 99) and 471 positive responses and 19 negative responses for the volunteer control group (N = 23; patients responding, N = 98), chi-square was 4.725, $p < .05$. The null hypothesis was rejected for this comparison. (Table 3 shows the chi-square relationships between the experimental group and the volunteer control group in relation to quality of nursing care as evaluated by patients.)

The control group (N = 28; patients responding, N = 92) received 452 positive responses and 8 negative responses. Comparing these results with those of the experimental group, chi-square was 0.022, not significant. (See Table 4.) The null hypothesis for differences between these groups in relation to quality of nursing care as evaluated by patients was accepted.

Instructors' anecdotal records. Thirteen instructors of freshman classes in nursing commented on the quality of nursing care provided by the 103 subjects in the study. These comments were separated into positive, neutral, and negative categories by the investigator. Examples of positive comments were: "Organizes her work well"; "Analyzes patients' needs very well"; "Utilizes interviewing techniques with patients";

Table 2

Responses of 289 Patients in Relation to Quality of Nursing Care

QUESTIONS	E.G. (N=28)		V.C.G. (N=23)		C.G. (N=28)		TOTAL (N=79)	
	YES	NO	YES	NO	YES	NO	YES	NO
Did you feel safe physically?	99	0	95	3	89	3	283	6
Did the student make you feel comfortable?	97	2	92	6	89	3	278	11
Did you feel better as a result of the student's care?	94	5	94	4	91	1	279	10
Was the student attractive in appearance	99	0	96	2	92	0	287	2
Would you like this student to give you care again?	98	1	94	4	91	1	283	6
TOTAL RESPONSES	487	8	471	19	452	8	1,410	35
PATIENTS RESPONDING	99		98		92		289	

Table 3

Chi-Square Relationships between the Experimental Group and the Volunteer Control Group in Relation to Quality of Nursing Care as Evaluated by the Patients

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/f_e$		
	E.G.	V.C.G.	BOTH	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	BOTH
YES	487	471	958	481.43	476.57	+5.57	-5.57	31.02	31.02	.064	.065	.129
NO	8	19	27	13.57	13.43	-5.57	+5.57	31.02	31.02	2.286	2.310	4.596
SUMS	495	490	985	495.00	490.00					2.350	2.375	4.725*

* Chi-square significant at $p \angle .05$

Table 4

Chi-Square Relationships between the Experimental Group and the Control Group in Relation to Quality of Nursing Care as Evaluated by the Patients

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2 / f_e$		
	E.G.	C.G.	BOTH	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	BOTH
YES	487	452	939	486.71	452.29	+.29	-.29	.084	.084	.000	.000	.000
NO	8	8	16	8.29	7.71	-.29	+.29	.084	.084	.010	.012	.022
SUMS	495	460	955	495.00	460.00					.010	.012	.022

Table 5

Chi-Square Relationships between the Experimental Group
and the Volunteer Control Group in Relation to the
Quality of Nursing Care as Evaluated by Instructors

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2 / f_e$		
COMMENTS	E.G.	V.C.G.	BOTH	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	BOTH
POSITIVE	43	7	50	35.62	14.38	+7.38	-7.38	54.49	54.49	1.530	3.789	5.319
NEGATIVE	9	14	23	16.38	6.62	-7.38	+7.38	54.49	54.49	3.326	8.231	11.557
SUMS	52	21	73	52.00	21.00					4.856	12.020	16.876***

***Chi-square significant at $p < .001$

Table 6

Chi-Square Relationships between the Experimental Group and the Control Group in Relation to Quality of Nursing Care as Evaluated by Instructors

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2 / f_e$		
COMMENTS	E.G.	C.G.	BOTH	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	BOTH
POSITIVE	43	16	59	34.47	24.53	+8.53	-8.53	72.76	72.76	2.111	2.966	5.077
NEGATIVE	9	21	30	17.53	12.47	-8.53	+8.53	72.76	72.76	4.151	5.835	9.986
SUMS	52	37	89	52.00	37.00					6.262	8.801	15.063***

***Chi-square significant at $p < .001$

"Demonstrates her concern for patient's comfort--sees that patient can reach bedside table easily"; "Patient-oriented, kindly and devoted"; "Able to convey acceptance to children and adults"; "Real ability to gain confidence of patients--respected for honesty and integrity"; "Excellent interpersonal relations with patients." Examples of neutral comments were: "Provides adequate patient care"; "Needs help with nursing care occasionally"; "Is making adequate progress as a freshman in nursing"; "Good interpersonal relations with patients, but needs considerable assistance in organizing her work." Negative comments included: "Highly defended--rigid--distant in I.P.R."; "Tell and do authority-oriented"; "Immature--do not readmit"; "Argumentive--defensive--judgmental--inappropriate"; "Inadequate organization--poor work habits"; "Runs from patients"; "Requires extra supervision while giving nursing care"; "Does not follow good safety practices while working with patients."

Comparison of the numbers of positive and negative comments for the experimental group and the volunteer control and control groups was made by calculating chi-square. The experimental group received 43 positive and 9 negative comments, and the volunteer control group, 7 positive and 14 negative comments. For this comparison, chi-square was 16.876, p.$<$.001. The null hypothesis was rejected for this comparison. (Table 5 shows the chi-square relationship for the experimental and volunteer control groups.)

The control group received 16 positive comments and 21 negative comments. (See Table 6.) Chi-square was calculated to be 15.063, p.$<$.001 in comparing the experimental group with the control group. The null hypothesis was rejected for the comparison.

Discussion. Three of the four comparisons made in the investigation of the quality of nursing care showed statistically significant results, and the fourth comparison showed no statistically significant difference. It is speculated that students who were involved in the sensitivity training were more aware than other students of patients' needs and feelings and responded with more appropriate behaviors to meet those needs. This speculation is supported by the number of positive comments made by instructors in evaluating the performance of students in the clinical settings. The quality of nursing care given by students as evaluated by patients and instructors seems to be improved through providing sensitivity training to the students.

Interpersonal Relations With Patients, Teachers, and Peers

HYPOTHESIS: The interpersonal relations of students with patients, teachers, and peers are not affected by sensitivity training of students.

Interpersonal relations of students with patients. Two hundred and eighty-nine patients completed the Patient Response form, evaluating 79 students in the three groups. (Table 7 shows patient responses to the six questions of the form relevant to interpersonal relations.) Of a total of 1,634 responses, 66 were negative in tone.

Chi-square was calculated to analyze results between the experimental group and the volunteer control and control groups. With 577 positive responses and 17 negative responses for the experimental group (N = 28; patients responding, N = 99) and 561 positive and 27 negative responses for the volunteer control group (N = 23; patients responding, N = 98), chi-square was 2.475, $p < .13$. (See Table 8.) Although a trend was shown favoring the experimental group, chi-square was not statistically significant at the .05 level of confidence, so *the null hypothesis was accepted for the comparison*.

The control group (N = 28; patients responding, N = 92) received 530 positive responses and 22 negative responses on the Patient Response form. Comparing the experimental group with the control group, chi-square was 1.097, $p < .30$. In this analysis, too, a trend was shown favoring the experimental group, but since the preselected level of confidence (.05) was not attained, *the null hypothesis was accepted for this comparison*. (Table 9 shows the chi-square results for the experimental group-control group comparison.)

Interpersonal relations of students with teachers. Thirteen instructors in the three programs of nursing education completed the Instructor Respondent form on three different occasions: October, 1964, January, 1965, and August, 1965. Results of these ratings were subjected to an analysis of variance to compare the experimental group with both the volunteer control and the control groups. (Tables 10 - 14 show the results on each of the five questions in the form.)

In comparing the experimental group with the volunteer control group, the F ratios which were obtained for the October evaluations, ranging from 1.28 to 3.29 on the five questions, were not significant. For the second rating period, all F ratios were significant at the .05 level or lower, with a range of values from 4.91 to 11.22. The data for the last rating period showed all F values to be significant at the .01 level or lower, with a range from 8.63 to 13.86. (Table 15 shows the analysis of variance results for these comparisons.) It seems probable that the lack of statistical significance on the first set of results was time-related, in view of the fact that teachers had known the students for only two to three weeks. The statistically significant results obtained on the second and third sets of data support this assumption, especially in view of the fact that the F ratios increased from the second to the third period as well as from the first to the second period. On the basis of the results, *the null hypothesis was rejected for these comparisons*.

In comparing the experimental group with the control group, somewhat different results were obtained. Three F ratios for the first rating period data were not statistically significant, one was significant at $p < .05$, and one at $p < .01$. Both significant ratios favored the experimental group. On question C, "Which students seem to be most acceptant of you as a person?" there was a reversal of the ratio, showing more difference within sets than between sets; however, this ratio was only 1.11 and not statistically significant. The range of F values was 1.11 to 13.21. These results may have been due to the fact that two to three weeks is a relatively short period of time for teachers even to learn the names of all the students in a new class. The results of the second rating data comparisons showed all F ratios to be statistically significant at the .01 level of confidence, all ratios favoring the experimental group. The range of F values was from 8.76 to 16.91. On the final set of data all items but one showed statistically significant results at the .01 level; results on question C, "Which students seem to be most acceptant of you as a person?" were significant at the .05 level. All ratios favored the experimental group. (See Table 16 for analysis of variance comparisons.) On the basis of the results obtained, *the null hypothesis was rejected for these comparisons*.

Interpersonal relations with peers. The entire freshman class in each of the three nursing education programs was asked to complete the Student Respondent form in October, 1964, January, 1965, and August, 1965. The subjects were rated by 162, 140,

Table 7

289 Patient Responses Regarding Interpersonal Relations of Students

QUESTIONS	E.G. (N=28)		V.C.G. (N=23)		C.G. (N=28)		TOTAL (N = 79)	
	YES	NO	YES	NO	YES	NO	YES	NO
Did the student look at you while you were talking?	98	1	93	5	89	3	280	9
Do you think the student listened to you?	99	0	96	2	90	2	285	4
Did you feel satisfied with the student's answers to your questions and comments?	95	4	93	5	89	3	277	12
Did the student seem to be in a hurry to leave you? **	7	92	9	89	8	84	24	265
Did you feel irritated or annoyed at the student's tone of voice? **	4	95	4	94	5	87	13	276
Did you feel that the student respected you as an individual?	98	1	96	2	91	1	285	4
TOTAL RESPONSES	401	193	388	197	372	180	1264	570
PATIENTS RESPONDING	99		98		92		289	

** Questions were phrased in a negative tone to lessen the possibility of patients checking "YES" without looking at the question. "YES" responses were interpreted as negative responses on the statistical analyses.

Table 8

Chi-Square Comparisons between the Experimental Group and the Volunteer Control Group Regarding Interpersonal Relations with Patients

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/ f_e$		
	E.G.	V.C.G.	BOTH	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	BOTH
POSITIVE	577	561	1138	571.88	566.12	+5.12	-5.12	26.21	26.21	.046	.046	.092
NEGATIVE	17	27	44	22.12	21.88	-5.12	+5.12	26.21	26.21	1.185	1.198	2.383
SUMS	594	588	1182	594.00	588.00					1.231	1.244	2.475*

* Chi-square significant at $p < .13$

Table 9

Chi-Square Comparisons between the Experimental Group and the Control Group Regarding Interpersonal Relations with Patients

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2 / f_e$		
	E.G.	C.G.	BOTH	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	BOTH
POSITIVE	577	530	1107	573.79	533.21	+3.21	-3.21	10.30	10.30	.019	.020	.039
NEGATIVE	17	22	39	20.21	18.79	-3.21	+3.21	10.30	10.30	.510	.548	1.058
SUMS	594	552	1146	594.00	552.00					.529	.568	1.097*

* Chi-square significant at $p < .30$

Table 10

Analysis of Variance Data for Instructor Responses to Question A: "With Which Students Do You Feel Most Comfortable as an Advisor?"

	OCTOBER, 1964 (M_w=.60)			JANUARY, 1965 (M_w=.64)			AUGUST, 1965 (M_w=.82)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
$\sum X_s$	26	19	17	36	12	14	37	8	11
M_s	.67	.83	.41	1.03	.52	.36	1.42	.53	.41
$\sum fx^2_s$	39.21	13.33	16.03	50.94	13.73	12.99	40.44	7.72	10.57
d_s	+ .07	+.23	- .19	+ .39	- .12	- .28	+ .60	- .29	- .41
d^2_s	.0049	.0529	.0361	.1521	.0144	.0784	.3600	.0841	.1681
nd^2_s	.1911	1.2167	1.4801	5.3235	.3312	3.0576	9.3600	1.2615	4.5387

Table 11

Analysis of Variance Data for Instructor Responses to Question B: "Which Students Seem to Be Most Responsive to You in Class?"

	OCTOBER, 1964 (M_w=.50)			JANUARY, 1965 (M_w=.69)			AUGUST, 1965 (M_w=.88)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
$\sum X_s$	25	10	16	42	10	15	39	4	15
M_s	.64	.43	.39	1.20	.43	.38	1.50	.27	.63
$\sum fx^2_s$	16.99	11.54	15.67	43.60	9.54	11.06	40.50	2.89	16.38
d_s	+ .14	- .07	- .11	+ .51	- .26	- .31	+ .62	- .61	- .25
d^2_s	.0196	.0049	.0121	.2601	.0676	.0961	.3844	.3721	.0625
nd^2_s	.7644	.1127	.4961	9.1035	1.5548	3.7479	9.9944	5.5815	1.6875

Table 12

Analysis of Variance Data for Instructor Responses to Question C: "Which Students Seem to Be Most Acceptant of You as a Person?"

	OCTOBER, 1964 (M_v=.35)			JANUARY, 1965 (M_v=.57)			AUGUST, 1965 (M_v=.91)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.C. (N=39)	E.C. (N=26)	V.C.G. (N=15)	C.G. (N=27)
ΣX_s	17	6	13	35	5	15	47	4	21
M_s	.44	.26	.32	1.00	.22	.38	1.35	.27	.78
Σfx^2_s	17.45	6.49	12.78	48.00	7.95	16.56	32.42	2.89	20.71
d_s	+ .09	- .09	- .03	+ .43	- .35	- .19	+ .44	- .64	- .13
d^2_s	.0081	.0081	.0009	.1849	.1225	.0361	.1936	.4096	.0169
nd^2_s	.32	.19	.04	6.47	2.82	1.41	5.03	6.14	.46

Table 13

Analysis of Variance Data for Instructor Responses to Question D: "Which Students Seem to Be the Best Listeners?"

	OCTOBER, 1964 (M_w=.79)			JANUARY, 1965 (M_w=.68)			AUGUST, 1965 (M_w=1.13)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
ΣX_s	38	21	22	39	15	12	48	10	19
M_s	.97	.91	.54	1.11	.65	.31	1.85	.67	.70
Σfx^2_s	20.94	21.87	24.13	43.47	15.16	10.46	41.32	7.35	27.63
d_s	+ .18	+ .12	- .25	+ .43	- .03	- .37	+ .72	- .46	- .43
d^2_s	.0324	.0144	.0625	.1849	.0009	.1369	.5184	.2116	.1849
nd^2_s	1.26	.33	2.56	6.47	.02	5.34	13.48	3.17	4.99

Table 14

Analysis of Variance Data for Instructor Responses to Question E: "Toward Which Students Do You Have the Warmest Personal Feelings?"

	OCTOBER, 1964 (M_w=.43)			JANUARY, 1965 (M_w=.48)			AUGUST, 1965 (M_w=.90)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G (N=15)	C.G. (N=27)
ΣX_s	25	12	7	29	9	9	42	8	11
M_s	.64	.52	.17	.83	.39	.23	1.62	.53	.41
Σfx^2_s	18.99	15.73	7.85	31.01	13.43	8.81	42.04	7.72	12.57
d_s	+ .21	+ .09	- .26	+ .35	- .09	- .25	+ .72	- .37	- .49
d^2_s	.0441	.0081	.0676	.1225	.0081	.0625	.5184	.1369	.2401
nd^2_s	1.72	.19	2.77	4.29	.19	2.44	13.48	2.05	6.48

Table 15

Analysis of Variance Results for Comparisons between the Experimental Group and the Volunteer Control Group on Interpersonal Relations with Teachers on Three Different Occasions

QUESTION	COMPONENTS	OCTOBER, 1964			JANUARY, 1965			AUGUST, 1965		
		df	SS	MS	df	SS	MS	df	SS	MS
With which students do you feel most comfortable as an advisor?	Between sets	1	1.41	1.41	1	5.65	5.65	1	10.62	10.62
	Within sets	60	52.54	.88	56	64.67	1.15	39	48.46	1.23
			F = 1.62			F = 4.91*			F = 8.63**	
Which students seem most responsive to you in class?	Between sets	1	.88	.88	1	10.66	10.66	1	15.38	15.38
	Within sets	60	28.53	.48	56	53.14	.95	39	43.39	1.11
			F = 1.83			F = 11.22**			F = 13.86**	
Which students seem to be most acceptant of you as a person?	Between sets	1	.51	.51	1	9.29	9.29	1	11.17	11.17
	Within sets	60	23.94	.40	56	55.95	1.00	39	36.31	.93
			F = 1.28			F = 9.29**			F = 12.01**	
Which students seem to be the best listeners?	Between sets	1	1.59	1.59	1	6.49	6.49	1	16.65	16.65
	Within sets	60	42.81	.71	56	58.63	1.05	39	48.67	1.25
			F = 2.24			F = 6.18*			F = 13.32**	
Toward which students do you have the warmest personal feelings?	Between sets	1	1.91	1.91	1	4.48	4.48	1	15.53	15.53
	Within sets	60	34.72	.58	56	44.44	.79	39	49.76	1.28
			F = 3.29			F = 5.67*			F = 12.13**	

* F significant at $p < .05$
** F significant at $p < .01$

Table 16

Analysis of Variance Results for Comparisons between the Experimental Group and the Control Group on Interpersonal Relations with Teachers on Three Different Occasions

QUESTION	COMPONENTS	OCTOBER, 1964			JANUARY, 1965			AUGUST, 1965		
		df	SS	MS	df	SS	MS	df	SS	MS
With which students do you feel most comfortable as an advisor?	Between sets	1	1.67	1.67	1	8.38	8.38	1	13.90	13.90
	Within sets	78	55.24	.71	72	63.93	.89	51	51.01	1.00
			F = 2.35			F = 9.42**			F = 13.90**	
Which students seem most responsive to you in class?	Between sets	1	1.26	1.26	1	12.85	12.85	1	11.69	11.69
	Within sets	78	32.66	.42	72	54.66	.76	51	56.88	1.12
			F = 3.00			F = 16.91**			F = 10.44**	
Which students seem to be most acceptant of you as a person?	Between sets	1	.36	.36	1	7.88	7.88	1	5.49	5.49
	Within sets	78	31.23	.40	72	64.56	.90	51	53.13	1.04
			F = 1.11			F = 8.76**			F = 5.28*	
Which students seem to be the best listeners?	Between sets	1	3.82	3.82	1	11.81	11.81	1	18.47	18.47
	Within sets	78	45.07	.58	72	53.93	.75	51	68.95	1.35
			F = 6.59*			F = 15.61**			F = 13.68**	
Toward which students do you have the warmest personal feelings?	Between sets	1	4.49	4.49	1	6.73	6.73	1	19.96	19.96
	Within sets	78	26.84	.34	72	39.82	.55	51	54.61	1.07
			F = 13.21**			F = 12.24**			F = 18.65**	

* F significant at $p < .05$
** F significant at $p < .01$

and 103 peers, respectively, during the three rating periods. (See Table 1 for number of subjects rated.) The data obtained were subjected to the analysis of variance procedure to permit statistical comparisons of the experimental group with the volunteer control and the control groups. (See Tables 17 - 21 for results obtained from the Student Respondent forms.)

In comparing the experimental group with the volunteer control group, F ratios on the first rating data ranged from 13.41 to 18.42 on the five questions, all significant at $p < .01$ and all favoring the experimental group. Data from the second rating period yielded F ratios ranging from 20.72 to 40.44, again all significant at $p < .01$; and the third set of data provided F ratios of 5.60 to 30.31, all but one ratio being significant at $p < .01$, and 5.60 being significant at $p < .03$. Both sets of data favored the experimental group. (Table 22 shows the results of the comparisons.) The null hypothesis was rejected for the comparisons of the experimental group with the volunteer control group on interpersonal relations with peers.

Analysis of variance comparisons between the experimental and control groups yielded F ratios on the five questions in the Student Respondent form ranging from 11.28 to 22.01 on the first ratings, from 16.63 to 29.28 on the second ratings, and from 6.14 to 21.24 on the final ratings. All ratios favored the experimental group; all were significant at $p < .01$ except for one item, "Which students do you feel have been and are most helpful to you?" which was significant at $p < .025$ on the final rating. On the basis of the analysis of variance results, the null hypothesis was rejected for these comparisons. (See Table 23 for the results of these comparisons.)

Because of the large F ratios obtained on the analysis of variance results, the data were subjected to calculation of $\bar{z}$ scores to determine the significance of differences of means. With a $\bar{z}$ score of $2.58 = p = .01$ and a $\bar{z}$ score of $1.96 = p = .05$, all $\bar{z}$ scores were significant at $p < .01$ but 3, 1 of which was significant at $p < .02$ and the other 2 at $p < .07$. (Table 24 shows the $\bar{z}$ score distribution.) It is of interest to note that the 2 $\bar{z}$ scores that did not reach the .05 level of confidence were on the two items in the analysis of variance results that were not significant at $p < .01$, the August data for question E: "Which students do you feel have been and are most helpful to you?" With all but 2 $\bar{z}$ scores out of 30 being significant at $p < .05$, the null hypothesis was rejected on this basis as well as on the basis of analysis of variance results.

Discussion. From the results of the data reported in this section, it is apparent that sensitivity training of students has a definite influence on the students' interpersonal relations with others. Although the comparisons of student-patient relationships did not reach a significant level ($p < .13$ for the experimental-volunteer control groups and $p < .30$ for the experimental-control groups comparisons), a trend was shown in favor of the experimental group in each case. This finding was somewhat surprising in view of past experiences with patients, which indicated general unwillingness of patients to say or do anything that might lower students' standings in class, as indicated in Chapter III. It is possible that the instructions on the Patient Response form did not completely remove this barrier. It is also possible, and perhaps more probable, that students take a longer time to provide care for patients than do other hospital personnel and so are evaluated more generally on this variable. It is a possibility, too, that students who are in the process of developing skills, including communication skills, are more painstaking in applying their knowledge and are seen by patients as being more interested in the patient. It is obvious that the questions involved in nurse-patient interactions are deserving of detailed and thorough investigation.

Table 17

Analysis of Variance Data for Student Responses to Question A: "With Which Students Do You Feel Most Free to Discuss Class Matters?"

	OCTOBER, 1964 (M_v=8.03)			JANUARY, 1965 (M_v=8.42)			AUGUST, 1965 (M_v=8.0)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
$\sum X_s$	421	164	250	416	135	266	290	71	182
M_s	10.80	7.13	6.10	11.86	5.87	6.82	11.15	4.73	6.74
$\sum fx^2_s$	759.16	460.68	841.61	649.58	304.68	1039.65	461.32	186.89	453.25
d_s	+2.77	- .90	-1.93	+3.47	-2.55	-1.60	+3.15	-3.27	-1.26
d^2_s	7.67	.81	3.72	12.04	6.50	2.56	9.92	10.69	1.59
nd^2_s	299.13	18.63	152.52	421.40	149.50	99.24	257.92	245.87	42.93

Table 18

Analysis of Variance Data for Student Responses to Question B: "With Which Students Do You Feel Most Free to Discuss Personal Problems?"

	OCTOBER, 1964 (M_w=3.82)			JANUARY, 1965 (M_w=4.34)			AUGUST, 1965 (M_w=4.29)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
$\sum X_s$	216	62	116	212	72	137	154	46	92
M_s	5.51	2.70	2.83	6.06	3.13	3.51	5.92	3.07	3.41
$\sum fx^2_s$	377.72	78.87	331.85	277.76	92.68	287.74	183.94	46.86	114.57
d_s	+1.69	-1.12	- .99	+1.72	-1.21	- .83	+1.63	-1.22	- .88
d^2_s	2.86	1.25	.98	2.96	1.46	.69	2.66	1.49	.77
nd^2_s	111.54	28.75	40.18	103.60	33.58	26.91	69.16	22.35	20.79

Table 19

Analysis of Variance Data for Student Responses to Question C: "Which Students Seem to Listen to You Best?"

	OCTOBER, 1964 (M_w=4.66)			JANUARY, 1965 (M_w=5.30)			AUGUST, 1965 (M_w=4.99)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
ΣX_s	254	78	148	272	86	154	198	41	100
M_s	6.51	3.39	3.69	7.77	3.83	3.95	7.62	2.73	3.70
Σfx^2_s	493.74	111.13	342.18	426.07	173.33	369.80	348.04	54.89	191.53
d_s	+1.85	-1.27	- .97	+2.47	-1.47	-1.35	+2.63	-2.26	-1.29
d^2_s	3.42	1.61	.94	6.10	2.16	1.82	6.92	5.11	1.66
nd^2_s	133.38	37.03	38.54	213.50	49.68	70.98	179.92	76.65	44.82

Table 20

Analysis of Variance Data for Student Responses to Question D: "Which Students do You Consider to Be Good Friends?"

	OCTOBER, 1964 (M =6.04)			JANUARY, 1965 (M =6.10)			AUGUST, 1965 (M =5.88)		
	E.G. (N=39)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
ΣX_s	313	120	189	311	97	184	208	53	139
M_s	8.03	5.22	4.69	8.89	4.22	4.72	8.00	3.53	5.15
Σfx^2_s	423.00	166.70	580.18	377.47	111.95	473.96	336.00	87.72	197.34
d_s	+1.99	- .82	-1.35	+2.79	-1.88	-1.38	+2.12	-2.35	- .73
d^2_s	3.96	.67	1.82	7.78	3.53	1.90	4.49	5.52	.53
nd^2_s	154.44	15.41	74.62	272.30	81.19	74.10	116.74	82.80	14.31

Table 21

Analysis of Variance Data for Student Responses to Question E: "Which Students Do You Feel Have Been and Are Most Helpful to You?"

	OCTOBER, 1964 (M_w=4.22)			JANUARY, 1965 (M_w=4.40)			AUGUST, 1965 (M_w=3.90)		
	E.G. (N=29)	V.C.G. (N=23)	C.G. (N=41)	E.G. (N=35)	V.C.G. (N=23)	C.G. (N=39)	E.G. (N=26)	V.C.G. (N=15)	C.G. (N=27)
ΣX_s	233	67	135	234	62	131	133	48	84
M_s	5.97	2.91	3.29	6.65	2.70	3.36	5.12	3.20	3.11
Σfx^2_s	622.94	87.87	446.32	417.50	80.87	342.99	264.54	56.40	196.61
d_s	+1.75	-1.31	- .93	+2.25	-1.70	-1.04	+1.22	- .70	- .79
d^2_s	3.06	1.72	.86	5.06	2.89	1.08	1.49	.49	.62
nd^2_s	119.34	39.56	35.26	177.10	66.47	42.12	38.74	7.35	16.74

Table 22

Analysis of Variance Results for Comparisons between the Experimental Group and the Volunteer Control Group on Interpersonal Relations with Peers on Three Different Occasions

QUESTION	COMPONENTS	OCTOBER, 1964			JANUARY, 1965			AUGUST, 1965		
		df	SS	MS	df	SS	MS	df	SS	MS
With which students do you feel most free to discuss class matters?	Between sets	1	317.76	317.76	1	570.90	570.90	1	503.79	503.79
	Within sets	60	1219.84	20.33	56	954.26	17.04	39	648.21	16.62
			F = 15.12**			F = 33.50**			F = 30.31**	
With which students do you feel most free to discuss personal problems?	Between sets	1	140.19	140.19	1	137.18	137.18	1	91.51	91.51
	Within sets	60	456.59	7.61	56	370.44	6.62	39	230.80	5.92
			F = 18.42**			F = 20.72**			F = 15.46**	
Which students seem to listen to you best?	Between sets	1	170.41	170.41	1	263.18	263.18	1	256.57	256.57
	Within sets	60	604.87	10.08	56	599.40	10.70	39	402.93	10.33
			F = 16.91**			F = 24.60**			F = 24.84**	
Which students do you consider to be good friends?	Between sets	1	169.85	169.85	1	353.49	353.49	1	199.54	199.54
	Within sets	60	589.70	9.83	56	489.42	8.74	39	423.72	10.86
			F = 17.28**			F = 40.44**			F = 18.37**	
Which students do you feel have been and are most helpful to you?	Between sets	1	158.90	158.90	1	243.57	243.57	1	46.09	46.09
	Within sets	60	710.81	11.85	56	498.37	8.90	39	321.08	8.23
			F = 13.41**			F = 27.37**			F = 5.60*	

* F significant at $p < .05$

** F significant at $p < .01$

Table 23

Analysis of Variance Results for Comparisons between the Experimental Group and the Control Group on Interpersonal Relations with Peers on Three Different Occasions

QUESTION	COMPONENTS	OCTOBER, 1964			JANUARY, 1965			AUGUST, 1965		
		df	SS	MS	df	SS	MS	df	SS	MS
With which students do you feel most free to discuss class matters?	Between sets	1	451.65	451.65	1	520.64	520.64	1	300.85	300.85
	Within sets	78	1600.77	20.52	72	1689.23	23.46	51	914.57	17.93
			F = 22.01**			F = 22.19**			F = 16.78**	
With which students do you feel most free to discuss personal problems?	Between sets	1	151.72	151.72	1	130.51	130.51	1	89.95	89.95
	Within sets	78	709.57	9.10	72	565.50	7.85	51	298.51	5.85
			F = 16.67**			F = 16.63**			F = 15.38**	
Which students seem to listen to you best?	Between sets	1	171.92	171.92	1	284.48	284.48	1	224.74	224.74
	Within sets	78	835.92	10.72	72	795.87	11.05	51	539.57	10.58
			F = 16.04**			F = 25.74**			F = 21.24**	
Which students do you consider to be good friends?	Between sets	1	229.06	229.06	1	346.40	346.40	1	131.05	131.05
	Within sets	78	1003.18	12.86	72	851.43	11.83	51	533.34	10.46
			F = 17.81**			F = 29.28**			F = 12.53**	
Which students do you feel have been and are most helpful to you?	Between sets	1	154.60	154.60	1	229.22	229.22	1	55.48	55.48
	Within sets	78	1069.26	13.71	72	760.49	10.56	51	461.15	9.04
			F = 11.28**			F = 21.71**			F = 6.14*	

* F significant at $p < .05$

** F significant at $p < .01$

Table 24

Distribution of $\bar{\bar{Z}}$ Scores for the Experimental Group Compared
with the Volunteer Control and Control Groups on
Interpersonal Relations with Peers

QUESTION	OCTOBER, 1964		JANUARY, 1965		AUGUST, 1965	
	V.C.G.	C.G.	V.C.G.	C.G.	V.C.G.	C.G.
With which students do you feel most free to discuss class matters?	2.87**	3.95**	4.91**	4.03**	4.86**	3.47**
With which students do you feel most free to discuss personal problems?	2.99**	2.76**	3.15**	2.66**	2.88**	2.61**
Which students seem to listen to you best?	3.09**	2.79**	3.65**	3.66**	4.45**	3.53**
Which students do you consider to be good friends?	2.70**	3.15**	4.67**	3.97**	3.89**	2.59**
Which students do you feel have been and are most helpful to you?	3.49**	2.49*	3.93**	3.23**	1.81	1.88

* $\bar{\bar{Z}}$ significant at $p < .05$
** $\bar{\bar{Z}}$ significant at $p < .01$

The findings concerned with student-teacher interpersonal relationships leave little doubt that sensitivity training of students had a strong influence on the results. With 9 of 10 comparisons being statistically significant at the .01 level of confidence, and 1 at the .05 level of confidence in the final (August, 1965) set of data, all in favor of the experimental group, compared with only 2 items being significant in the first set of data, a marked effect on student-teacher relationships was demonstrated. It was anticipated that no significant differences would be found in the October data, since the teachers had only a short time to become acquainted with students. It is hypothesized that the 2 significant results reflected, even at that early date, the effects of sensitivity training on the experimental group.

The final point in this discussion is that a strong effect of sensitivity training on interpersonal relations with peers was demonstrated. Both the analysis of variance results and the $\overline{z}$ scores for significance of difference of means statistically indicated the marked effects of sensitivity training on the experimental group. It might be argued that such results might have occurred from the experimental subjects' earlier close contact with each other or from the fact that they volunteered for the experience. These arguments are rejected on the basis that the volunteer control subjects had the same advantages but that statistical results showed very significant differences between the two groups. The arguments are rejected also on the findings that even after one year, during which time the control group could have overcome the early contact advantage, the differences between the experimental group and the control group were still very significant except for one item, "Which students do you feel have been and are most helpful to you?"

In relation to this item, two possible explanations for lack of significance are presented. First, a review of individual scores indicates that in one school three students in the experimental group who were perceived by peers as being very helpful dropped out of the program. Since the question was, "Which students do you feel have been and are most helpful to you?" respondents were not likely to include these three students in the last set of data. In the same school only one control group subject who was perceived as being very helpful in October left the program; none of those in the volunteer control group so perceived dropped out. A second possible explanation is that over the period of a year members of the volunteer control and control groups who remained in the programs were developing skills in the helping relationship to the point that differences in this factor were not as significant as in other factors. It must be recalled, however, that a level of confidence of .07 was attained on this item, which still shows a strong trend in favor of the experimental group.

In discussing the student-teacher interpersonal relations results, it was noted that only two items showed a significant difference on the first set of data. This situation was not true for the October data related to peer interpersonal relations, in which all differences were significant at $p < .01$. Two factors may be involved in this latter finding. One is that students in the experimental and volunteer control groups were known to other members of their own groups, although not of the other groups. The second factor would be that the students in the entire class were together for long periods of time daily, but with different teachers throughout the day. This constant contact would allow relationships to develop more rapidly among peers than between students and teachers. Furthermore, students as a group would have more common interests and objectives to help establish relationships than would be found ordinarily in teacher-student relations within a college setting.

To summarize, data relevant to interpersonal relations with patients show a trend in favor of the experimental group, and those concerned with interpersonal relations with teachers and peers show statistically significant differences. The conclusion can be drawn, then, that sensitivity training of students has a very definite influence on interpersonal relations with others, and the null hypothesis is doubtful for the patient group and is rejected for the peer and teacher groups.

Grades in Nursing Courses

HYPOTHESIS: The grades attained by students in nursing courses are not influenced by sensitivity training of students.

Of the 103 students originally involved in this study, 90 remained in their respective programs for a sufficiently long time to acquire grades in nursing courses. (See Table 1.) Of the 90, 35 were in the experimental group, 20 in the volunteer control group, and 35 in the control group. The experimental group attempted a total of 427 units in nursing courses, compiling 1,079 grade points and a grade point average of 2.50. The volunteer control group attempted 206 units and attained 499 grade points, with a grade point average of 2.42. The control group attempted 424 units, resulting in 1,042 grade points, with a grade point average of 2.46. (Table 25 shows these results in tabular form.)

To determine any significant differences in means, $\bar{z}$ scores were calculated from the grade point averages. In comparing the experimental group with the volunteer control group, a $\bar{z}$ score of .065 resulted; comparison of the experimental group with the control group resulted in a $\bar{z}$ score of .031. Neither result showed a statistically significant difference in means. (Table 26 shows the $\bar{z}$ score comparisons.)

Total grade points achieved by the subjects were compared for significance by means of analysis of variance. The F ratio for the comparison of the experimental group with the volunteer control group was 1.83, showing a trend in favor of the experimental group, but not significant at $p = .05$. In comparing the experimental group with the control group, the F ratio was .48, a finding that indicated more differences within the groups than between groups. When calculated within this frame of reference, the F ratio was 2.10. Neither F ratio was statistically significant. (Table 27 shows the analysis of variance results on the total grade points comparisons.)

On the basis of comparisons of grade point averages and total grade points attained, the null hypothesis was accepted. In this study at least, sensitivity training had little effect on the grades attained in nursing courses, although a slight trend in favor of the experimental group was found when compared with the volunteer control group.

Attrition Rate

HYPOTHESIS: The attrition rate of students in the first year of their associate degree program in nursing education is not affected by student experience in sensitivity training.

The attrition rate of subjects in the three programs was calculated at the end of the first year of study. Of the 103 students involved in the study originally, 45 dropped out of their respective programs, an attrition rate of 43.7 percent. The attrition from the

Table 25

Grade Points and Grade Point Averages in Nursing Courses of the Three Groups

GROUP	UNITS ATTEMPTED	GRADE POINTS	G.P.A.
Experimental (N=35)			
School A	162	402	2.48
School B	86	189	2.20
School C	179	488	2.73
Sub-totals	427	1079	2.50
Volunteer Control (N=20)			
School B	113	270	2.39
School C	93	229	2.46
Sub-totals	206	499	2.42
Control (N=35)			
School A	153	313	2.05
School B	99	269	2.72
School C	172	460	2.67
Sub-totals	424	1042	2.46
All groups (N=90)			
School A	315	715	2.27
School B	298	728	2.44
School C	444	1177	2.65
TOTALS	1057	2620	2.48

Table 26

$\bar{Z}$ Score Comparisons of the Experimental Group with the Volunteer Control and Control Groups on Grade Point Averages

	E.G.	V.C.G.	C.G.
N	35	20	35
Mean G.P.A.	2.50	2.42	2.46
$\sum fx^2$	29.37	13.33	27.60
Variance	.84	.67	.79
S.D.	.9	.8	.9
$\bar{Z}$ Score		.065	.031

Table 27

Analysis of Variance Results for Comparisons between the Experimental Group and the Volunteer Control and Control Groups on Total Grade Points Attained

	E.G. (N=35)	V.C.G. (N=20)	C.G. (N=35)
$\sum X_s$	1098	499	1055
M_s	31.3	25.5	30.1
$\sum fx^2_s$	10311.15	3205.00	7704.35
d_s	+ 1.8	- 4.2	+ .6
d^2_s	3.24	17.64	.36
nd^2_s	113.40	352.80	12.60

Comparison between E.G. and V.C.G. F = 1.83

Comparison between E.G. and C.G. F = 2.10*

* More difference within sets than between sets

experimental group was 14 from 39, a rate of 35.9 percent; from the volunteer control group, 13 from 23, a rate of 56.5 percent; and from the control group, 18 from 41, a rate of 43.9 percent. Comparing these rates, it is seen that the attrition rate of the experimental group was 20.6 percentage points lower than that of the volunteer control group, and 8.0 percentage points lower than that of the control group. (See Table 28.) A point of interest in the comparisons was that School B reversed the findings from the other two programs. (Table 29 shows the attrition rates by schools.)

Chi-square was calculated to compare the experimental group with the volunteer control and control groups. Chi-square for the experimental group-volunteer control group comparison was 2.50, significant at $p < .13$, and for the experimental group-control group comparison, .53, significant at $p < .40$. (See Table 30.)

Using Yates's correction for continuity method, chi-square was calculated for the comparisons without the data from School B. Results showed a chi-square of 3.89, significant at $p < .05$ for the experimental group-volunteer control group comparison, and of 2.50, significant at $p < .13$ for the experimental group-control group comparison. (Table 31 shows these comparisons.)

Since chi-square did not reach the .05 level of confidence for comparisons for all three schools, the findings were not statistically significant and the null hypothesis was accepted. However, the trend was in favor of the experimental group in all comparisons, with a significant difference being demonstrated between the experimental group and the volunteer control group when School B data were eliminated.

Summary of Findings

To summarize this chapter, the following points are made:

1. Two hundred eighty-nine patients evaluated the nursing care provided them by the subjects. A chi-square of 4.725, significant at $p < .05$ resulted from the experimental group-volunteer control group comparison, and the null hypothesis was rejected. Chi-square for the experimental group-control group comparison was .022, not significant, and the null hypothesis was accepted.
2. Thirteen instructors evaluated the nursing care provided by the subjects. Chi-square results for comparisons between the experimental group and the volunteer control and control groups were 16.876 and 15.063, respectively, both significant at $p < .001$. The null hypothesis was rejected in each instance.
3. Chi-square results for comparisons between the experimental group and the volunteer control and control groups on interpersonal relations of students with the 289 patients were 2.475 and 1.097, neither significant at the .05 level. The null hypothesis was accepted for these comparisons, although a trend in favor of the experimental group was shown in each instance, with $p < .13$ and $p < .30$, respectively.
4. Analysis of variance comparisons of interpersonal relations of the subjects with 13 instructors were made. All F ratios in the final rating were found to be in favor of the experimental group and significant at $p < .05$. The null hypothesis was rejected in each instance in comparing the experimental group with the two control groups.
5. Analysis of variance comparisons of interpersonal relations of the subjects with their peers resulted in F ratios that were significant at $p < .03$ in all instances, in favor of the experimental group. The null hypothesis was rejected. These findings were confirmed by $\overline{z}$ scores for significance of differences of

Table 28

Attrition Rates by Groups

GROUPS	NUMBER ENROLLED	NUMBER DROPPED BY 8/31, 1965	ATTRITION RATES %
EXPERIMENTAL			
SCHOOL A	11	2	18.2
SCHOOL B	13	9	69.2
SCHOOL C	15	3	20.0
Sub-totals $d_s = - 7.8\%$	39	14	35.9
VOLUNTEER CONTROL			
SCHOOL B	13	7	53.9
SCHOOL C	10	6	60.0
Sub-totals $d_s = + 12.8\%$	23	13	56.5
CONTROL			
SCHOOL A	13	7	53.9
SCHOOL B	13	6	46.2
SCHOOL C	15	5	33.3
Sub-totals $d_s = + 0.2\%$	41	18	43.9
ALL GROUPS	103	45	43.7
$M_w = 43.7\%$			

Table 29

Attrition Rates by School

GROUP	SCHOOL A N	 DROPPED	 *A.R.%	SCHOOL B N	 DROPPED	 A.R.%	SCHOOL C N	 DROPPED	 A.R.%
EXPERIMENTAL	11	2	18.2	13	9	69.2	15	3	20.0
VOLUNTEER CONTROL				13	7	53.9	10	6	60.0
CONTROL	13	7	53.9	13	6	46.2	15	5	33.3
totals	24	9	37.5	39	22	56.4	40	14	35.0

* A.R.% - Attrition rate in per cent

Table 30

Chi-Square Comparisons of the Attrition Rate of the Experimental Group with the Volunteer Control and Control Groups, Including School B

E.G. and V.C.G.

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/f_e$		
	E.G.	V.C.G.	BOTH	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	BOTH
STAYED	25	10	35	22.02	12.99	+2.98	-2.99	8.88	8.94	.40	.69	1.09
DROPPED	14	13	27	16.98	10.01	-2.98	+2.99	8.88	8.94	.52	.89	1.41
SUMS	39	23	62	39.00	23.00					.92	1.58	2.50

E.G. and C.G.

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/f_e$		
	E.G.	C.G.	BOTH	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	BOTH
STAYED	25	23	48	23.40	24.60	+1.60	-1.60	2.56	2.56	.11	.10	.21
DROPPED	14	18	32	15.60	16.40	-1.60	+1.60	2.56	2.56	.16	.16	.32
SUMS	39	41	80	39.00	41.00					.27	.26	.53

Table 31

Chi-Square Comparisons of the Attrition Rate of the Experimental Group with the Volunteer Control and Control Groups, Excluding School B (with Yates's Correction)

E.G. and V.C.G.

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/f_e$		
	E.G.	V.C.G.	BOTH	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	E.G.	V.C.G.	BOTH
STAYED	20.5	4.5	25	18.06	6.94	+2.44	-2.44	5.95	5.95	.33	.86	1.19
DROPPED	5.5	5.5	11	7.94	3.06	-2.44	+2.44	5.95	5.95	.76	1.94	2.70
SUMS	26.0	10.0	36	26.00	10.00					1.09	2.80	3.89*

E.G. and C.G.

	f_o			f_e		$f_o - f_e$		$(f_o - f_e)^2$		$(f_o - f_e)^2/f_e$		
	E.G.	C.G.	BOTH	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	E.G.	C.G.	BOTH
STAYED	20.5	16.5	37	17.81	19.19	+2.69	-2.69	7.24	7.24	.41	.38	.79
DROPPED	5.5	11.5	17	8.19	8.81	-2.69	+2.69	7.24	7.24	.89	.82	1.71
SUMS	26.0	28.0	54	26.00	28.00					1.30	1.20	2.50

* Chi-square significant at $p < .05$

means, of which 28 out of 30 comparisons were in favor of the experimental group at $p < .05$.

6. No statistically significant results were found in comparing grades in nursing courses achieved by the experimental group with those achieved by the two control groups, although a trend was shown in favor of the experimental group. The null hypothesis was accepted.
7. Chi-square comparisons of attrition rates favored the experimental group over the volunteer control and control groups, although not at the .05 level of confidence. The null hypothesis was accepted.

Chapter V

OTHER OBSERVATIONS AND QUESTIONS RAISED

This chapter presents some additional information that was gained during the course of the study but not subjected to statistical analysis. Many of the data were collected in diary form from the sensitivity training sessions, and some questions were raised as a result of the statistical findings as presented in Chapter IV.

Data From Sensitivity Training Sessions

Data from the sensitivity training sessions were collected from each of the three experimental subgroups involved in the study. Some of the data related to causes of anxiety as described by students during the training sessions, others were observations made by the investigator of the interactions of students, and additional data were in the form of anecdotes reported by the students in relation to their utilization of knowledge and skills developed during the training sessions. These data are organized and presented according to the three categories to which they were allotted.

Causes of anxiety as described by students. During the first week of training, the subjects described anxieties related to the experience of sensitivity training. They stated their concerns about how much they could trust each other with information about themselves and how they would be able to use the information from the training sessions to be better nurses and lead "better lives at home." They described many family problems, including their feelings toward parents, spouses, siblings, and children. Some of these descriptions will be reported more fully in the anecdotal section of this discussion.

In relation to nursing, the students presented many of the usual concerns of beginning students: "What will it be like to take care of patients?" "What do you say to patients?" "How will patients react to me as a nurse student, especially a freshman?" "Will I be able to learn all I need to know to be a good nurse?" "Is this the right nursing education program for me?" "Will I like nursing?" "What will our teachers be like?" These questions were raised for discussion in all three experimental subgroups during the first week of training.

By the time of the first follow-up visit, the students were involved in providing nursing care to patients and were facing their midterm examinations. The anxieties expressed during the first week about how to talk with the patients and what their teachers would be like were not raised to any degree. Students commented that they enjoyed their patient contacts for the most part, that they felt distressed over the condition of certain of their patients, and that they believed that the patients liked the students to provide nursing care. One group expressed concerns related to their teachers, but the other two groups indicated appreciation for the help and understanding they received from their teachers.

The major causes of anxiety described by students in all the follow-up sessions were related to classwork, family problems, grades, feelings about nursing, and in one school, faculty dissension. The following quotes from the students indicate relationships between these causes of anxiety and attrition from the educational programs, and demonstrate the kinds of feelings and problems shared with the group.

One student reported, "My husband says I'm spending too much time away from home. He is behaving so badly that I'm going to have to drop out of the program. After all, my first responsibility is to him." This student was to become the first dropout from the experimental group. "My grandmother--I live with my grandparents--expects me to do the housework and cooking for my room and board. She just nags me so much that I can't study! I don't know if I can take it much longer." This student dropped out of her program a month later but explained to her group that she realized that she was ". . . just too immature to make a go of it right now," but that she had a better idea of what she would have to do when she was readmitted. Another student described her intense dislike for patient contact and stated that "Nursing really isn't for me!" The intensity of her feeling led to tears, and her group worked together to indicate that her behavior was understood by them and that her feelings were accepted by other members of the group. After much discussion with the group as to the reasons for her reaction to nursing, the student reached the conclusion that she would resign from the nursing education program, a decision which was supported by the group.

In one subgroup there was much discussion about the behavior of one teacher and the resultant faculty dissension and its effects on the students. The students described the teacher's behavior toward them in the clinical areas. "She seems to like to embarrass you in front of other people; I'm scared of her." "You can be right in the middle of recording something, and she'll take the chart away to give it to a doctor--she won't even wait until you finish a sentence." Several other comments were made by the students that demonstrated their feelings of anxiety about the teacher's behavior. The intensity of feelings about the instructor was so marked that the group spent almost one entire follow-up session trying to work through their feelings in a constructive way. There was some evidence that the students realized that their behavior could have an effect on the teacher's behavior, but at this time they were unable to accept this idea as a group.

The discussions in the January sessions centered on final examinations and the fact that this would be the last follow-up meeting. In one school there was considerable discussion related to how the students themselves had contributed to poor faculty relations and how they might have behaved to lessen tension rather than increase it. There was some discussion of family concerns and fatigue resulting from trying to work full-time while attempting a full program of study. Many comments were made about the values of sensitivity training as the students perceived it. Some anxiety was expressed over discontinuance of the follow-up training, but most expressions indicated a feeling of responsibility for and commitment to the concepts of sensitivity training in the improvement of human relations in nursing.

Observations made by the investigator. Over the entire period of training, numerous changes in the groups were observed by the investigator. From the initial indications of distrust, obvious mutual trust developed, as demonstrated by the depth of feelings and thoughts shared with other members of the groups. Group problem-solving skills developed to a marked degree, which helped students change behaviors and accept responsibility for their own actions. Communications became more straightforward, and there was willingness to ask, "Is this what you mean?" Awareness of nonverbal communications developed to the point that the students commented on such communications and would ask other students what the communications meant. By the end of the first week, the collection of individual students who had been strangers to each other had become a group with common goals and interests. This feeling seemed to be maintained throughout the one semester during which the groups were observed.

In comparing the reactions of the experimental group to sensitivity training with previously observed reactions of registered nurses to the same kind of training, it seemed that the students were much more acceptant. There was, perhaps, no need to maintain a status of "leader," or perhaps the students were more flexible in their approaches to life. Whatever the reason for the difference, it was a pleasant one, and it made the training process less difficult for the trainer. Finally, one instructor stated that although she did not know who was in the group, it was apparent that ". . . sensitivity training was being felt throughout the class, as was demonstrated by students' willingness to ask questions and involve themselves in class discussions more than was true in any previous class."

Anecdotal reports by students. The following anecdotes were volunteered by students during the training sessions to demonstrate how they were utilizing the knowledge and skills gained in the sessions. Although there were numerous such "testimonials," only four are reported here.

First anecdote: During the first week of training, one student indicated that she felt she was very close to becoming a juvenile delinquent. She shared with her group an accounting of some of her escapades, which indicated that her self-appraisal was quite accurate. Members of the group asked her if she could explain her behaviors, and she gave the following account.

"Ever since I can remember, I have never been able to talk with my parents. Both of them have always worked at the business, and I only see them three weeks during the summer and once in a while over the weekends. They leave the house early, before my brother and I are awake, and come home after we are in bed. Every night they go out for dinner and to play cards. When I do see them and try to talk with my mother, she always makes me cry and feel worse, so I don't try to talk with her any more. My father is a clown and never takes what I say seriously, so I just don't talk with him, either. I feel like my brother and I are just 'things' to both of my parents. I needed someone I could talk to, and I got in with the wrong kind of kids, but at least they listened once in a while."

Faced with this problem, the group proposed a tentative solution. It was indicated by the student that she found it a little easier to talk with her father than with her mother. She agreed to try once more, but not in the home. She also agreed to let the group know what happened.

At the October meeting the student reported back to her group. She had asked her father to take her out for a cup of coffee and to talk. An hour was spent in the discussion, which apparently was of a highly emotional nature. During the conversation, she told him of her feelings of lack of love and understanding from her parents and of her need to be able to talk with them about her concerns. After the discussion, the parents went out for their card game. The student reported, "I know my father talked with my mother about it, because when they came home, she came into my room, and for the first time I can remember in all my life, she kissed me."

With this much accomplished, the student continued to report slowly improving relations with her parents. In July, the student reported to the investigator that she was engaged to be married to a lawyer. In August, a note from the parents to the investigator expressed the parents' appreciation for the help they and their daughter had received from the sensitivity training sessions.

Second anecdote: On the Friday of the first week of training, one student could hardly wait for the group to assemble. After the usual preliminary chatting had taken place, the student said, "Listen, you guys, I want to tell you what happened to me last night." She then proceeded to give the following account.

She is the mother of three young children, who were cared for by a neighbor during the training week. Her husband is out of town much of the time, working as a test pilot. The family lives in a neighborhood where the custom has been to leave doors unlocked. When she returned home Thursday evening, she found a strange man in her kitchen. Although startled, she thought only that he had entered the wrong house and said to him, "I think you are in the wrong house. Your friends must live in the next house." The man responded, "No, I'm not in the wrong house. I'm hungry, and I want you to feed me." The student became frightened and started backing toward the door, whereupon the man drew a gun and said, "If you take another step, I'll kill you!"

The student reported, "I thought, 'Sensitivity training! My behavior will affect his behavior, and I have to stay calm and think before I say anything,' so I said, 'Oh, all right, I'll feed you.' For forty-five minutes I cooked hamburgers and everything else I had to feed him. I tried to get him to take a bath, but he wouldn't. Then I asked him if I could call my neighbor and find out about my children. The telephone is in the kitchen, so he told me to go ahead but not to try anything funny. I called my neighbor and asked if the kids were all right. She was a little insulted and said, 'Say, what's the matter with you?' I said, 'Oh, nothing, nothing; I'm fine.' She had seen the man in the neighborhood, and said, 'Say, is there a strange man in your house?' I said, 'Yes, yes, I'm just fine. Don't worry about me.' She said, 'I'll call the police. Be careful!' Well, within five minutes, the police were there and took the man into custody without a struggle. They told me that he had escaped from _______ State Hospital Tuesday night and was considered to be a dangerously homicidal patient. I tell you people, sensitivity training saved my life! Before this week, I would never have realized that my behavior could affect the behavior of another person, and I know I could never have gone through this experience in the way I did last night!"

The tension created by this report was broken by the student, who added, "I'll tell you something else. The doors in the neighborhood won't be left unlocked any more!"

Third anecdote: During the afternoon of the November session at one school, a large bouquet of flowers was delivered to the investigator, with an unsigned card. The group indicated no knowledge of who had sent them, and the matter was dropped, at least temporarily. After the session ended, one of the students said, "My husband sent the flowers." Her story follows.

Her husband's sister was hospitalized for treatment of a cerebral vascular accident. During the visits to her, the husband had become very depressed. One afternoon, as she was going through the wastebasket looking for something, the student found a receipt for a gun. She realized that her husband was very depressed and might commit suicide, so she took a two-week leave of absence from school to be with him and to look for the gun. She finally found the gun, hidden under the crib mattress of their little son, who had died recently as a result of a car accident. She realized that her husband needed her badly, so she resigned from school. She never mentioned the gun, but finally her husband told her about its purchase and his intent to commit suicide, rather than suffering and dying as his sister had done. The flowers had been sent because, "My husband wanted to thank you. He said that without this training I would never have been aware enough of his needs to leave school and stay with him. I can go back to school later if I want to, but I have only one husband."

Fourth anecdote: The final anecdote deals with a family group. One student, happily married and the mother of three children, established a weekly family session. During these sessions, the children, as well as the parents, were given freedom to comment about family relations and problems. The student told her peer group, "I thought our family was close before, but it has become even more of a family as a result of our sensitivity training sessions." At a later session of the group, she gave another progress report. "Our group is spreading through the neighborhood. Our youngsters' friends ask them to talk over their problems in our family sessions, and now two other families are doing the same thing." Other members of the group encouraged the student to continue the family sessions and to keep them informed of progress.

The data presented in this section were not related directly to the specific questions of this study--i.e., quality of nursing care, interpersonal relations with patients, teachers, and peers, grades in nursing courses, and attrition rates. It is apparent from them, however, that sensitivity training was perceived by the students as being valuable in ways that extended beyond the immediate purposes of this study.

Questions Raised as a Result of The Statistical Findings

Several questions were raised as a result of the statistical analyses presented in Chapter IV. These questions were concerned with the deviation in results from one school and the results obtained for the volunteer control group.

The results from School B. The most unexpected results reported in Chapter IV were those dealing with the attrition rate and grades in nursing courses in School B. (See Tables 25 and 28.) It is hypothesized that the reversals seen in these two aspects of the study resulted from three major causes.

Faculty dissension, as reported by the students in the sensitivity training sessions and confirmed by the faculty itself, seemed to have a very negative effect on students' grades and on the attrition rate. It is probable that the experimental group members were more acutely aware of intrafaculty problems than were members of the other groups and so were more affected by them. A second cause was financial need; both of the students who attempted to work full-time and carry the complete program dropped out of the nursing program. Finally, a group of miscellaneous personal problems and issues contributed to the results. Family commitments and awareness of lack of readiness for the program of study caused the attrition of three students, marriage led two to drop out of the program, and two dropouts resulted from apparent emotional instability. It is possible that some of these students would have been able to tolerate the stresses of their situations and remain in school had it not been for the additional frustration resulting from the intrafaculty dissension.

The results obtained for the volunteer control group. During analysis of the data, the investigator became aware of the fact that in nearly all instances the volunteer control group compared less favorably with the experimental group than did the control group. Since this group volunteered for training and had additional information about human relations (see Appendix B for the outline of content), it was anticipated that the members of the group would compare more favorably than the control group with experimental group members. It was anticipated, too, that the "Hawthorne effect" would operate in the situation. Why, then, were the results in the opposite direction?

It can be speculated that: (1) there was more awareness of problems in interpersonal relations but little support to "work through" these problems; (2) there was some resentment about giving up a week of vacation time and not gaining more from the lecture-discussion sessions; (3) the lecture-discussion sessions were too "loaded"; or (4) just talking about human relations is not an effective way for the student to learn how to cope with problems in human relations. Whether or not these speculations are correct, the fact remains that in most instances the volunteer control group did less well than the control group.

Chapter VI

SUMMARY, CONCLUSIONS, IMPLICATIONS OF THE STUDY, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Summary

This study was concerned with the effects of sensitivity training on the performance of students in associate degree programs of nursing education, related specifically to quality of nursing care, interpersonal relations with patients, teachers, and peers, grades in nursing courses, and attrition rates. Sociometric forms were devised to measure interpersonal relations, a questionnaire was provided to patients for evaluation of nursing care, and official records were utilized to measure quality of nursing care as evaluated by instructors, grades in nursing courses, and the attrition rates.

Positive relationships were hypothesized between sensitivity training and (1) nursing care, (2) interpersonal relations of students, and (3) grades in nursing courses; a negative relationship was hypothesized between sensitivity training and the attrition rate of students during the first year of their nursing education programs. Null hypotheses, derived from the above, were stated in the following form:

1. Sensitivity training for students in associate degree programs of nursing education has little or no effect on the quality of nursing care they provide as evaluated by nurse instructors and patients.
2. The interpersonal relations of students with patients, teachers, and peers are not affected by sensitivity training of students.
3. The grades attained by students in nursing courses are not influenced by sensitivity training of students.
4. The attrition rate of students in the first year of their associate degree program of nursing education is not affected by student experience in sensitivity training.

One hundred and three students in three California junior colleges were the subjects for the study. Of this number, 39 were in the experimental group, 23 in the volunteer control group, and 41 in the control group. The subjects were rated on 289 Patient Response forms; by 13 instructors in the three schools, and by 162, 140, and 103 students, respectively, on three different occasions.

Statistical methods utilized for analysis of data were: chi-square for patient responses, instructor evaluations of nursing care, and attrition rates; one-way classification analysis of variance for interpersonal relations with teachers and peers and for total grade points accumulated; and significant differences of means for interpersonal relations with peers and for grade point averages. The level of confidence selected was .05 because of the relatively small sample, especially for the volunteer control group and the last teacher and peer ratings for all groups.

Statistical findings were significant at the selected level of confidence for the following comparisons: patient evaluation of nursing care between the experimental group and the volunteer control group; instructor evaluations of nursing care between the experimental group and both the volunteer control and the control groups; interpersonal relations with instructors between the experimental group and both the volunteer control and the control groups; and, interpersonal relations with peers between the experimental group and both the volunteer control and the control groups. All statistically significant findings were in favor of the experimental group, and the related null hypotheses were rejected.

Trends in favor of the experimental group were shown statistically in the following comparisons: interpersonal relations with patients between the experimental group and the volunteer control group ($p < .13$) and between the experimental group and control group ($p < .30$); and attrition rates between the experimental group and volunteer control group ($p < .13$) and between the experimental group and control group ($p < .40$). A slight trend in favor of the experimental group over the volunteer control group was found in comparing total grade points accumulated ($F = 1.83$). Because the preselected level of confidence (.05) was not attained for these comparisons, the appropriate null hypotheses were accepted.

No trends were identifiable in comparison of the experimental group with the control group on patients' evaluations of nursing care, on grade point averages comparing the experimental group with the other groups, or on total grade points accumulated, comparing the experimental group with the control group. The null hypotheses related to these comparisons were accepted.

In addition to the statistical analyses, data from the sensitivity training sessions were presented. These data were indicative of values of sensitivity training not related specifically to the study.

Conclusions

It was concluded that this study was significant in the area of nursing education in that it: offered evidence of the effectiveness of sensitivity training for improving the performance of students in nursing in relation to some of the major problems in nursing education and practice; presented techniques for measurement of the quality of nursing care provided to patients and of the interpersonal relations of students with others; and showed the effects of faculty dissension on the performance of students.

From the statistical results, it was concluded that sensitivity training of students exerted:

1. A strongly positive effect on interpersonal relations of students with teachers and peers and to a lesser extent, of students with patients.
2. A strongly positive effect on the quality of nursing care as evaluated by instructors and to a lesser extent, as evaluated by patients.
3. A positive, though not statistically significant, effect on the attrition rate of students in associate degree programs of nursing education.
4. A slightly positive effect on the grades attained by students involved in the study.
5. Considerable influence on students' lives in ways not statistically analyzed, but as demonstrated by the anecdotes presented by students.

The effects of sensitivity training were demonstrated by the fact that although one year elapsed from the time of initial contact of students with each other and with their teachers to the time of the final ratings, neither the volunteer control nor the control group members ever reached the level of interpersonal relations as evaluated by their peers and teachers that was attained by members of the experimental group. It is apparent that more than time was required to explain the differences obtained in the study and that the important variable was sensitivity training of the experimental group members.

Implications of the Study

The results obtained indicate that this study has implications for other nursing education programs, especially associate degree programs, for improvement of nursing care, improvement of interpersonal relations of students with patients, teachers, and peers, and for lowering attrition rates. The results of the study indicate that sensitivity training was effective in these important aspects of nursing education in the three programs involved in the study. It seems probable that similar results would occur in other kinds of nursing education programs--i.e., diploma, baccalaureate, and graduate programs, and that sensitivity training should be included in the curricula of both basic and advanced nursing education programs.

A second implication of the study is found in the possible use of sensitivity training of students in other areas of education. In any field of human endeavor in which interpersonal relations play a major role, such as teaching, medicine, social work, law, police work, the ministry, government, and business, sensitivity training could be utilized to increase the knowledge and skills essential for effective human relations. Indeed, it seems not too far afield to hypothesize that sensitivity training early in life could improve interpersonal relations to the point of substantially reducing the toll from mental illness in the community and the nation.

A third implication evolves from the students' descriptions of causes of anxiety and relates specifically to teachers. If teacher behavior increases the anxiety of students to the point that it interferes with learning, then teachers should make definite efforts to change their behaviors, perhaps through involvement in sensitivity training. The need for identifying important issues and objectives in class and for testing for achievement of those objectives was defined clearly by the students in the training sessions. Since emphasis is placed on developing the ability of students to define and meet patient needs, it seems desirable that teachers provide a model by making efforts to define and meet student needs.

Recommendations for Further Research

All of the effects of sensitivity training on the performance of students in nursing education programs cannot be included in one study, nor is it possible to demonstrate conclusively in one experiment the values of such training as were presented in this report. It is recommended, therefore, that further research include:

1. Replication of the present study, using the same criteria for judging performance of students in different associate degree programs of nursing education.
2. Replication of the present study, using the same criteria for judging performance of students in different types of nursing education programs--i.e., diploma, baccalaureate, and graduate programs.
3. Studies of the effects of sensitivity training on student performance in nursing, with different criteria for evaluating the effectiveness of such training.
4. Studies to determine the validity and reliability of measurements obtained on the devices used in this study.
5. Studies to determine the effectiveness of sensitivity training on the performance of students in disciplines other than nursing and in schools other than junior colleges.
6. Studies to determine whether the values of sensitivity training can be achieved more effectively by other educational approaches.

Additional questions that can be answered only by further research include:

1. What effect does sensitivity training on a follow-up basis have on maintaining or increasing knowledge and skills attained in intensive sensitivity training?
2. What effect does the trainer have on the results of sensitivity training?
3. Is it more effective or less effective to utilize a trainer from the same professional group as the trainees?
4. To what extent, and how, do the trainees extend the knowledge and skills gained in sensitivity training to other individuals?
5. Should sensitivity training be an integral part of the curricula of nursing education programs of various types?
6. Are the results of this experiment applicable to other educational situations?
7. Is sensitivity training effective in situations other than educational programs?

Only when answers to these and other questions are provided through comprehensive and thorough research can the effectiveness of sensitivity training be evaluated accurately.

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Appendix A

SOCIOMETRIC FORMS USED IN THE STUDY

Student's Name ______________

Date ______________________

PATIENT RESPONSE

In an effort to improve nursing education, we are studying the care given by students in junior college nursing programs. As a patient, you can help by answering the following questions about the care you had from the student today. Please be frank and feel free to make comments. STUDENTS WILL NOT BE GRADED ON THE BASIS OF YOUR ANSWERS. We appreciate your help.

Please check "yes" or "no" to the following questions. When you have completed the form, please fold it once. Someone other than the instructor will collect the form from you.

	YES	NO
1. Did the student look at you while you were talking?	___	___
2. Do you think the student listened to you?	___	___
3. Did you feel satisfied with the student's answers to your questions and comments?	___	___
4. Did the student seem to be in a hurry to leave you?	___	___
5. Did you feel irritated or annoyed at the tone of voice?	___	___
6. Did you feel that the student respected you as an individual?	___	___
7. Did you feel safe physically?	___	___
8. Did the student make you feel comfortable?	___	___
9. Did you feel better as a result of the student's care?	___	___
10. Was the student attractive in appearance?	___	___
11. Would you like this student to give you care again?	___	___
12. Have you been given care by this student before today? (If so, how many days? _____)	___	___
13. Are you a male patient?	___	___

COMMENTS:

Date ______________________

STUDENT RESPONDENT

Directions: In answering the following questions, please circle the numbers corresponding to the students' names on the "List of Students."

A. With which students do you feel most free to discuss class matters (teaching, assignments, tests)?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

B. With which students do you feel most free to discuss your personal problems (grades, dates, home matters)?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

C. Which students seem to listen to you best?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

D. Which students do you consider to be good friends?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

E. Which students do you feel have been and are most helpful to you?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Date ____________________

INSTRUCTOR RESPONDENT

A. With which students do you feel most comfortable as an advisor?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

B. Which students seem to be most responsive to you in class?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

C. Which students seem to be most acceptant of you as a person?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

D. Which students seem to be the best listeners?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

E. Toward which students do you have the warmest personal feelings?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Appendix B

OUTLINE OF HUMAN RELATIONS IN NURSING

Lecture-Discussion Method

I. Definition of Nursing.
   - A. Some classic definitions.
   - B. Discussion.
     - 1. "What is nursing to you now?"
     - 2. "What will nursing be to you five years from now?"

II. The Expectations We Have Each of the Other in the Job We Do Together in the School of Nursing.
   - A. The student and others.
   - B. The teacher and others.

III. Specific Concepts Useful in Human Relations in Nursing.
   - A. Concept of self.
     - 1. Developmental tasks of human beings.
     - 2. Discussion: Application of this concept in nursing.
   - B. Basic human needs--Maslow's hierarchy of needs.
   - C. Anxiety, tension, and energy.
     - 1. Means of dealing with anxiety.
     - 2. Understanding anxiety.
     - 3. Securing one's self.
     - 4. Finding our satisfactions in relationships.
   - D. The dynamisms of human behavior.
     - 1. Operational meanings in somatization; forms of denial; withdrawal, aggression, frustration, conflict, et cetera.
     - 2. How problems get started and brought to solution; learning how we do this.
     - 3. Importance of cooperation, compromise, and collaboration.
   - E. Concepts of authority.
     - 1. Rational.
     - 2. Nonrational.
   - F. Concepts of freedom and responsibility.
     - 1. How we get "free" and responsible.
     - 2. Are people afraid of and resistant to freedom in human relations?

IV. Overflow of the Nursing Profession.
   - A. Prejudgments about nursing.
   - B. Preconceptions about nursing--crossing bridges before one gets to them, fallacies re: future work.

V. Evaluation of Week's Work.